PINELAND FOREST

INDEPENDENT FOREST AUDIT
2002-2007

Arbex Forest Resource Consultants Ltd.

Oxford Mills, Ontario

December 2007

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1.0. Executive Summary

This report presents the findings of the Independent Forest Audit (IFA) of the Pineland Forest (SFL # 550816) for the five year period of April 1st, 2002 to March 31st, 2007.

The audit conformed to the requirements of the 2007 Independent Forest Audit Process and Protocol (IFAPP) prepared by the Ontario Ministry of Natural Resources (OMNR). The IFA process is based on a detailed assessment of eight broad principles. Each principle has associated criteria which are examined to determine if the management of the Forest was in compliance with provincial legislation, regulations and policies that were in effect during the audit term.

The audit assessed the forest management activities of Domtar Inc. and the Ontario Ministry of Natural Resources (OMNR) Chapleau District. Corporate and Regional OMNR and overlapping licensees and contractors, are considered auditees to the extent that forest management activities carried out by them are the subject of audit examination.

- The last four years of the Pineland portion of the 2001-2006 Pineland-Martel Forest Management Plan (FMP).
- The first year of implementation of the 2006 - 2011 Pineland Forest FMP.
- The planning and development of the 2006 Pineland Forest FMP.

We conclude that the implementation of forest management on the Pineland Forest was substantially in compliance with the Crown Forest Sustainability Act (CFSA) and in accordance with the requirements of its regulated manuals. Improvement is needed in meeting some mandatory reporting timelines and reporting requirements. It is our conclusion that the Pineland Forest was well managed during the audit term for the following reasons:

- Appropriate information was available to support forest management planning efforts. Information on other values was limited but sufficient to meet planning obligations.
- Forest management planning activities adhered to FMPM requirements.
- A Local Citizens Committee (LCC) was properly constituted and participated in the planning and implementation of forest management.
- Areas of Concern were appropriately protected through proper planning and prescription implementation.

- Forest management activities (e.g. harvest, renewal, tending) adhered to appropriate manuals and operations and were implemented with minimal evidence of environmental degradation.
- Forest operations were compliant with forest management standards.
- Compliance monitoring was appropriate for the level of operations.
- Forest management records were well organized, accessible and current.
- OMNR met its obligations to First Nations with respect to EA Condition 77 & Condition 34. OMNR and Domtar fostered productive relations with interested First Nations.
- Recommendations of the 2002 IFA were satisfactorily addressed.

We recognize the Chapleau District's First Nation Task Team initiative as a Best Management Practice for effectively engaging aboriginal communities in forest management and other land use issues during the audit period.

The audit did identify some shortcomings with respect to the delivery of forest management and we provide 14 recommendations and 3 suggestions to address the following:

- A significant land area has been classified as depleted in the forest inventory database. This area requires assessment for free-to-grow status.
- The current Ministerial wood supply commitments are not compatible with the predicted future wood supply.
- An improvement in the field monitoring of silvicultural effectiveness is required to ensure that investments in silvicultural are not lost.
- The OMNR Chapleau District faces serious issues with respect to funding and staff turn-over which undermine its capacity to collect information, gain and retain field experience, and make local knowledge-based decisions.
- Submission deadlines for some mandatory documents were not adhered to.
- Continual changes to forest management guidelines, forest boundaries and reporting standards have impaired the forest manager's ability to assess the sustainability of the forest.
- The IEA process can be initiated without prior involvement in the forest management planning, consultation and issue resolution processes and provincial level issues such as the use of chemicals in forest management are being debated through a local FMP process at the expense of local industries and communities.

- Forest management deferrals resulting from the application of the IEA process have delayed forest management activities on the Pineland Forest. As a result, treatment backlogs exist and losses of the investment in site preparation and forest renewal have occurred. Additionally, timelines for achieving the intended effects of silviculture (i.e. improvements to growth and yield by reduced vegetative competition) have been extended. These circumstances have implications with respect to the achievement of FMP objectives and sustainable forest management. Monitoring of sites and remedial action(s) will be required to ensure that investments in silvicultural are not lost and that long term forest management objectives are achieved.
- Long-standing issues associated with gated access restrictions require resolution.
- The process for regulating replacement area(s) for the Woman River Complex Conservation Reserve (C1564) is still on-going and requires resolution.

We conclude that forest sustainability is being achieved on the Pineland Forest. For the audit period Domtar met its SFL contractual obligations and we recommend that the Minister of Natural Resources extend Sustainable Forest Licence # 550816 for a further five years.

2.0. INTRODUCTION

This report presents the findings of the Independent Forest Audit (IFA) of the Pineland Forest (SFL # 550816) for the period of April 1st, 2002 to March 31st, 2007. The audit assessed the forest management activities of Domtar Inc. and the Ontario Ministry of Natural Resources (OMNR) Chapleau District. Corporate and Regional OMNR and overlapping licensees and contractors, are considered auditees to the extent that forest management activities carried out by them are the subject of audit examination.

Specifically, the audit assessed:

- The last four years of the Pineland portion of the 2001-2006 Pineland-Martel Forest Management Plan (FMP).
- The first year of implementation of the 2006 - 2011 Pineland Forest FMP.
- The planning and development of the 2006 Pineland Forest FMP.

2.1. Audit Process

Ontario legislation requires that Sustainable Forest Licences (SFL) be audited every five years by an Independent Auditor. The Independent Forest Audit Process and Protocol (IFAPP), developed by the OMNR, provides a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP contains individual procedures that direct the independent auditors to collect, analyze, interpret and document appropriate information to determine if various criteria have been met.

The IFAPP states that the purpose of the independent forest audit is to assess:

- The compliance of forest management planning activities with the Forest Management Planning Manual (FMPM) and the Crown Forest Sustainability Act (CFSA).
- The compliance of forest management activities with the CFSA and with the Forest Management Plans, the manuals approved under the CFSA and applicable guides.
- The effectiveness of forest management activities in meeting the forest management objectives set out in the Forest Management Plans, as measured in relation to the criteria established for the audit.
- The relative success of forest management activities carried out compared to those that were planned.

- The effectiveness of any Action Plans implemented to remedy shortcomings revealed by a previous audit.
- The licensee's compliance with the terms and conditions of the forest resources licence.

The audit process is based on a detailed assessment of eight IFAPP principles:

- Commitment.
- Public participation.
- Forest management planning.
- Plan implementation.
- System support.
- Monitoring.
- Achievement of management objectives and sustainability.
- Contractual obligations.

Each IFAPP principle has a series of specific criteria which, if met, will result in the achievement of that principle. The specific criteria are based on applicable legislation, manuals, and guidelines related to forest management contained in the 2007 IFAPP. The results of the evaluation of evidence against the criteria determine the audit findings. Those findings are then analyzed and aggregated to determine the outcome of the audit.

The audit was conducted by Arbex Forest Resource Consultants Ltd. (Arbex). The audit team consisted of three Registered Professional Foresters (R.P.F.) an economist, and three specialists with expertise in fish and wildlife management, land use planning, public consultation, and compliance. The audit team members and their qualifications are presented in Appendix B.

The audit consisted of the following elements:

Audit Plan: An audit plan describing the schedule of audit activities, audit team members, audit participants and the auditing methods was prepared and submitted to Domtar, the OMNR Chapleau District and the Local Citizens Committee (LCC) Chair.

Public Notices: Several methods were used to solicit public participation and comment including the posting of a public notice in the Chapleau Express and Timmins Daily Express newspapers and a random mailing to 35% of the individuals on the OMNR Pineland Forest mailing List. The public notices and the letters invited comment on the management activities of the OMNR and Domtar and invited individuals to complete a questionnaire attached to the letter or via the internet on the Arbex website. Contact coordinates for the lead auditor (toll free telephone, e-mail and fax) were also provided. Seven responses were received.

Local Citizens Committee members and First Nations with an interest in the Pineland Forest were also contacted by telephone, e-mail, and mail to solicit participation in the field audit and/or comment on the forest management activities of Domtar and the OMNR.

Field Site Selection: Field site selections were made by the Lead Auditor and the Arbex GIS Specialist in early June. Site selections were confirmed and finalized at a meeting with Domtar staff prior to the Pre-Audit Meeting (June 20th). Domtar staff, Chapleau OMNR staff and the LCC Chair attended the pre-audit meeting. This meeting outlined the purpose, expectations and deliverables of the audit and reviewed the final site selections and the audit plan.

Pre-audit Document Review and Interviews: To prepare for the audit, all documents associated with the implementation of the 2001-2006 Pineland-Martel Forest Management Plan (FMP) and the first year of the 2006 - 2011 Pineland Forest FMP were reviewed. Documentation related to the planning of the 2006 FMP (e.g. planning team minutes) was reviewed. Telephone interviews and e-mail exchanges were undertaken with representative stakeholders identified from the FMP mailing list or from responses received from our public notification of the audit.

Site Audit: The audit team spent seven days in Timmins conducting the field audit, document reviews and interviews. The field audit inspected a range of 11-27% of the harvesting and silvicultural operations that occurred during the audit period (Table 1). Inspection sites were stratified to ensure adequate representation of silvicultural systems (i.e. harvest systems such as careful logging or traditional clearcut), silvicultural activity (i.e. tree planting, mechanical site preparation) season of operation, contractors, and year of operation. Eighty-four sites were visited by road or helicopter. The audit team also viewed the application of Areas of Concern (AOC) prescriptions, water crossing installations, and road construction and maintenance work. Areas listed in the "Forest Renewal and Maintenance Agreement" and the "Forest Renewal Trust Specified Procedures Report" were inspected to ensure conformity between work invoiced and actual field activities.

Our field inspections included site-specific (intensive) and landscape-scale (extensive) examinations. While individual sites were selected to represent a primary activity (e.g. harvesting, site preparation, tending) all associated activities at the site were assessed at the same time, allowing the team to augment the planned sampling intensity for some activities.

TABLE 1. IFA FIELD SAMPLING INTENSITY ON THE PINELAND FOREST

Activity	**Total Area (Ha) / Number (2002-2007)**	**Area (Ha) Sampled**	**Number of Sites Visited**	**Percent[1] Sampled (%)**
Harvest	25,922	2,851	33	11
Artificial Regeneration	9,360	1,867	37	20
Site Preparation	8,640	1,687	33	20
Natural Regeneration	7,740	813	13	11
Tending	9,771	1,610	32	11
Free-to-Grow	11,633	1,231	20	11
Pre-commercial Thinning	278	30	2	11
Specified Procedures Report Sites	4,548**	1,223	25	27
Areas of Concern[2]		254		
Water Crossings	57		12	21

* Denotes number sampled

** Excludes Slash Pile Burn areas- (a sample of slash pile burn areas were inspected but it is not possible to calculate the area of the sample).

Report: This report provides a description of the audit process and a discussion of audit findings and conclusions. The recommendations provided are directed at deficiencies in forest management and associated processes that require corrective action by Domtar and/or the OMNR. Audit recommendations must be dealt with within two months of the receipt of the audit report through an Action Plan developed collaboratively by the SFL holder and the OMNR.

Audit report suggestions are directed at less serious issues, and offer guidance for improvement. Auditee's are not required to respond to suggestions. Auditors may also note "best practices" in the audit report. A "best practice" highlights a forest management practice or level of performance that was believed to be exceptional. Best practices may recognize the efforts of the SFL holder and/or the OMNR.

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[1] Percent sampled represents the location of prime audit activity. In addition to the prime audit activity all additional silvicultural, protection and construction activities on that site were also inspected. For example, a site selected primarily to audit planting activities was also inspected for associated chemical tending, culvert construction etc.

[2] A significant number of AOCs on the forest are linear features (e.g. riparian areas) as opposed to point features (e.g. nest sites). For this reason most of the assessment was area based.

2.2. Forest Management Context

The Pineland Forest (PF) is situated in northeastern Ontario, largely between the towns of Chapleau and Foleyet (Figure 1). It is comprised of two distinct sections; the Pineland section and the Gogama Management Unit (GMU)[3] .

The Pineland-Martel Forest (PMF) was established on April 1st, 2001 following the amalgamation of the Pineland Forest with the J.E. Martel Forest. During the preparation of the 2006-2026 FMP a business arrangement between Domtar and Tembec resulted in the closing of Domtar's sawmill operation in Chapleau and the transfer of the former J.E. Martel Forest to Tembec. Domtar maintained forest management planning and reporting responsibilities for the Pineland-Martel Forest, and directed the harvesting and silvicultural activities on the Pineland portion for the remainder of the 2001-2006 FMP term. Tembec assumed control of the harvesting and silvicultural activities on the Martel portion. Following the preparation of the 2005-2006 Annual Work Schedule (AWS), two separate forest management plans were prepared with Domtar being responsible for the stand-alone Pineland Forest FMP.

Domtar Inc. administers forest management and planning activities on the PF under SFL # 550816 in accordance with approved OMNR policies and procedures. It is responsible for directing harvesting, renewal and planning, maintaining the Forest Resource Inventory (FRI), monitoring compliance and ensuring that the Forest is managed sustainably. Forest management activities are coordinated through its regional office in Timmins. It is noteworthy that, SFL # 550816 has a conditional term (2006-2026) and a requirement that the renewal of the licence is contingent upon the Minister of Natural Resources being satisfied that there has been compliance with the terms and conditions of the licence based on the results of the 2002-2007 Independent Forest Audit for the former Pineland Forest.

The Chapleau District of the OMNR has the lead responsibility for all OMNR forest management planning and compliance obligations as the majority of the area is situated within the District's administrative boundary (a small portion is situated within the Timmins District). The Chapleau District is administered regionally by the OMNR Northeast Regional Office in Timmins. The OMNR is responsible for FMP review and approval, non-forest values data collection and maintenance, ensuring that forest operations are in compliance with the approved plan and for facilitating First Nation communities involvement in forest management.

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[3] The GMU is comprised of 9 whole/part townships located to the west of the town of Gogama and represents approximately 15% of the Pineland Forest area.

Six First Nations (FN) have asserted interests in the Forest. These include Brunswick House FN, Mattagami FN, Michipicoten FN, Chapleau Cree FN, Chapleau Ojibwe FN and the Missanabie FN. No reserves are situated within the Forest boundary.

2.2.1. Map of the Management Unit

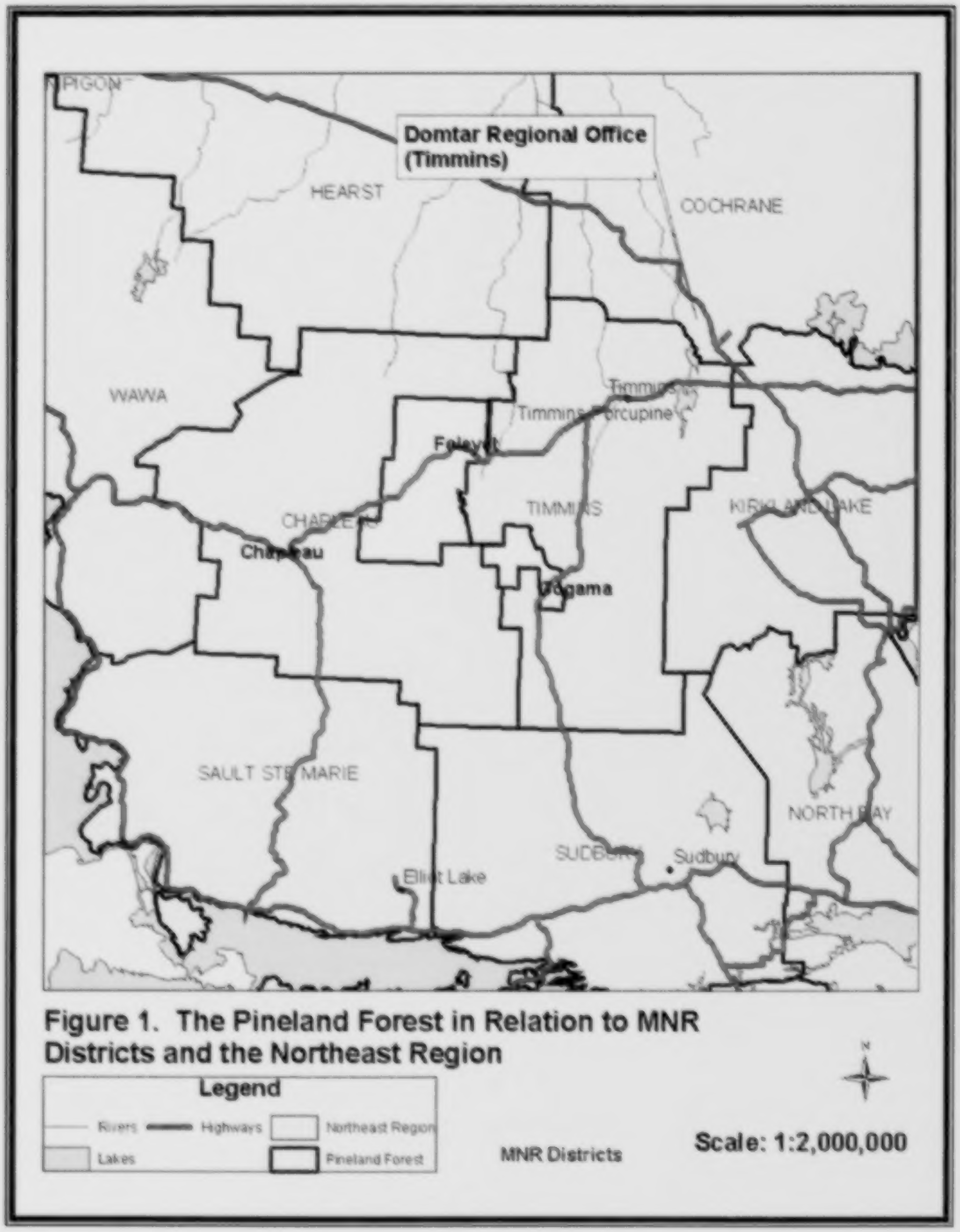

PIGON
Domtar Regional Office (Timmins)
HEARST
COCHRANE
WAWA
Timmins
Timmins-Porcupine
Foleyet
TIMMINS
CHAPLEAU
Chapleau
Gogama
KIRKLAND LAKE
SAULT STE MARIE
NORTH BAY
SUDBURY
Sudbury
Elliot Lake
Figure 1. The Pineland Forest in Relation to MNR Districts and the Northeast Region
Legend
Rivers
Highways
Northeast Region
Lakes
Pineland Forest
MNR Districts
N
Scale: 1:2,000,000

FIGURE 1. LOCATION OF THE PINELAND FOREST.

2.2.2. Description of the Management Unit

The Pineland Forest covers a total area of 393,860 hectares. Table 2 provides a summary of the area in each land classification. Ninety nine percent of the land base, or 391,081 hectares is Crown land. On the Crown land 6,790 hectares are managed as parkland (i.e. Ivanhoe Lake Provincial Park), 9,351 hectares as Conservation Reserves, and 368,429 hectares are managed by Domtar. The remaining Crown land area (6,510 ha) is not managed for timber production. This area is known as C1564 which is an unregulated OLL site.

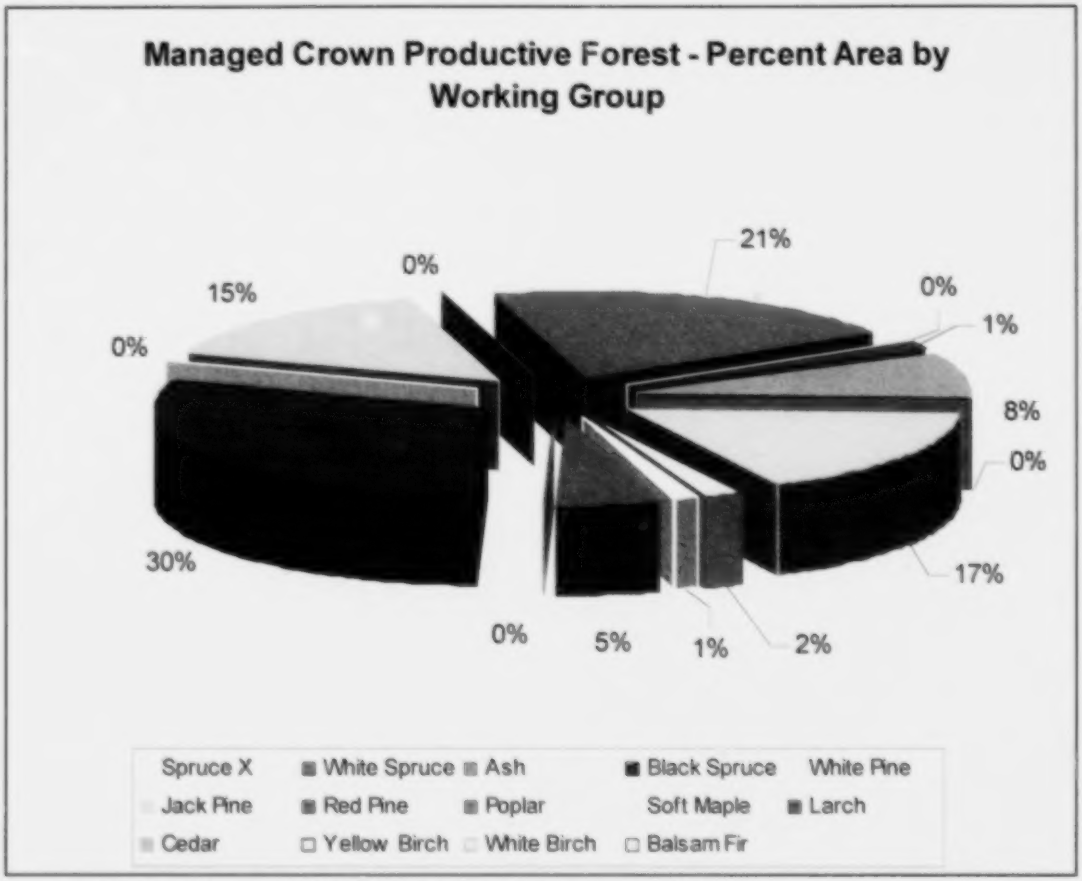
TABLE 2. SUMMARY OF LAND CLASSES OF MANAGED CROWN LAND

Land Class	**Managed Crown Forest Area (Ha)**	**Production Forest Area (Ha)**	**Percent of Managed Crown Forest Area**
Non-Productive Forest	21,747.60		6.5
Protection Forest	1,687.10		0.5
Production Forest	309,618.50		93
Forest Stands		255,915.60	77
Barren & Scattered		6,597.70	2
Depleted		47,105.20	14
Total:	333,053.20	309,618.50	93

Source: FMP-1 Table: Management Unit Land Summary in Hectares

The Forest is situated entirely within the Missinaibi-Cabonga Forest Section of the Boreal Forest Region (B.7). This region is characterized by rolling topography covered by boreal species such as black and white spruce, balsam fir, jack pine, aspen and white birch. Cedar, white pine, red pine and yellow birch are fairly abundant in localized areas. The Forest has typical representation of boreal birds, mammals, amphibians and reptiles.

The proportional representation of forest working groups on Crown production land in the Pineland Forest is shown in Figure 2.



Source: Pineland Forest 2006-2026 Forest Management Plan

FIGURE 2. PROPORTIONAL REPRESENTATION OF WORKING GROUPS BY AREA ON THE PINELAND FOREST

Spruce working groups occupy thirty-six percent of the productive forest. Black spruce is the predominant species occupying approximately thirty percent of the area. Spruce occurs in pure stands on lowland sites or in association with jack pine, poplar and white birch on transitional sites and upland mineral soils. Shade intolerant stands of poplar, jack pine and white birch are transitioning to spruce through natural succession due to the exclusion of fire on the landscape.

Poplar working group stands comprise approximately twenty-one percent of the productive forest. This working group has become locally important for the production of oriented strand board and veneer. The age class distribution of poplar is skewed towards mature and overmature classes. The current age class status of the poplar working group is expected to impose future wood supply constraints.

The jack pine working group occupies approximately 15% of the managed Crown productive forest area. The species most frequently occurs in pure stands, but may also be found growing in association with spruce, balsam fir, poplar and white birch. On shallow sites the species is prone to rot after age eighty, reducing its merchantability. The age class distribution of this working group is heavily skewed to younger age classes (75% is less than 60 years of age) due to harvesting and renewal strategies implemented during the past twenty years. These strategies harvested areas of mature jack pine before they declined and "stored" spruce "on the stump" to reduce the impact of projected future conifer shortages.

Other working groups include white birch, yellow birch, cedar, larch, balsam fir, ash, white pine, red pine and hard and soft maple. Tolerant hardwood working groups typically occur more frequently in the southern portions of the Forest. There is a limited presence of white pine (1,027 ha) and red pine (23 ha) working groups.

Approximately 47,105 hectares are currently classified as "depleted"[1] (approximately 15% of the production forest area) in the forest inventory. This area includes the forecasted depletion area (2003 – 2006) for the PMF. Based on past harvest levels (1997-2001 & 2001-2006 FMP's) this area is equivalent to approximately 10 years of depletion area that has not received a Free to Grow (FTG) assessment. In Section 3.4.3, we discuss the need to survey these areas.

As indicated, the age class area distribution is skewed towards the youngest (0-20 years) and older age classes (61-100 years) with a corresponding shortage between (21 - 60 years) (Figure 3). The large amount of area in the 0-20 age class reflects recent harvest and natural depletions and the inclusion of lands previously classified as depleted in the inventory. The preponderance of area in the mature and overmature age classes reflects both the history of fires prior to1950 and past timber harvesting between 1910 and 1950. The shortage of 21-60 age classes is the result of forest management activities in the mid 1940's to mid 1980's where effective fire suppression and limited harvesting reduced the area of mature forest that was disturbed and converted to young forest. The imbalance in age class structure has significant forest management implications with respect to sustaining an even flow of wood product over the next forty years.

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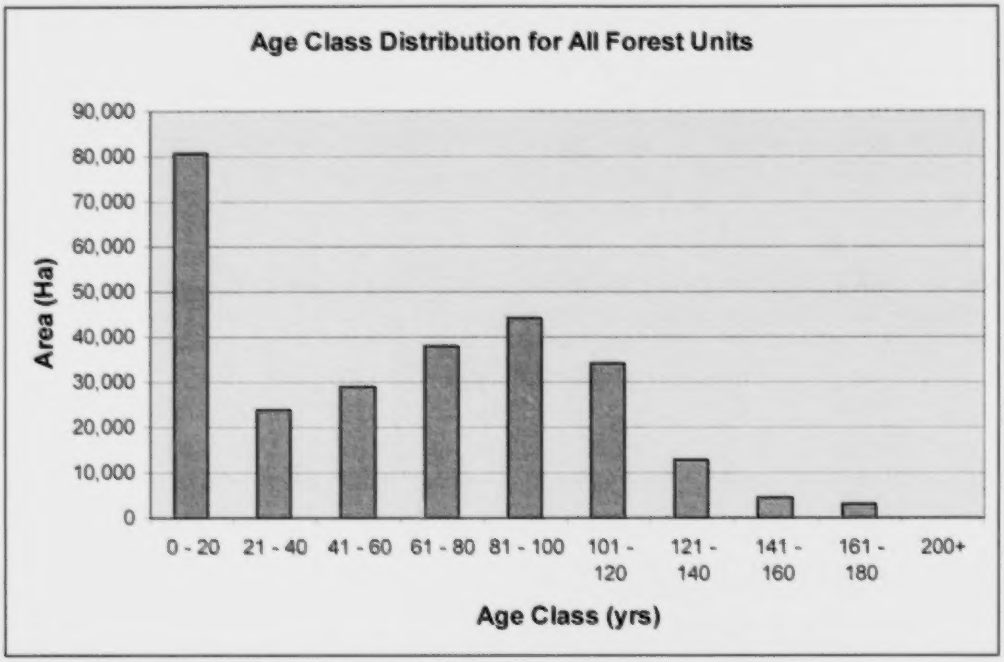
[1] Depleted area means the managed forest area on which the merchantable volume has been decreased due to harvest, fire, insects, disease or other causes and where forest renewal is required.



Source: Trends Analysis – Table 5. 2006 – 2011 PF FMP

FIGURE 3. AGE CLASS DISTRIBUTION FOR ALL FOREST UNITS IN THE PINELAND FOREST

The 2006 FMP indicates planned annual harvest volumes of 265,800 m^3 of conifer and 160,100 m^3 of hardwoods. This volume is to be obtained from the annual harvest of 3,775 hectares. Harvest operations are conducted by four contractors. Wood cut from the Forest supplies products to Domtar sawmills in Timmins, Ostrom, Nairn Centre and the pulp mill in Espanola. Additionally, there are commitments for hardwood timber to Grant Forest Products Corp. (Timmins) and Norbord Industries Inc. (Cochrane). Sawmill residues (chips, shavings and sawdust) are used by pulp and paper mills located in northeastern Ontario.

The Forest is also used extensively by recreationalists and a resource based tourism industry has been in existence for at least seventy years. There are currently 23 resource based tourism establishments that operate 11 main base lodges, 35 outpost camps and a variable number of seasonal tent sites. Thirty-three lakes have been designated as tourism lakes. There are 21 Bear Management Areas, and 28 registered traplines. Ivanhoe River Provincial Park is entirely within the Forest boundary and 3 conservation reserves were identified as a result of the Ontario's Living Legacy (OLL) initiative. These sites do not form part of the available land base for wood supply modeling purposes.

2.2.3. Forest Management Issues

The key forest management issues that were identified during the development of the 2006 Pineland Forest FMP are summarized below. Where these issues emerged as part of our audit findings they are discussed in the appropriate sections of the report.

Sustainable Wood Supply

A significant drop in available softwood and hardwood volumes is anticipated over the next 40 years as a result of the existing age class structure. An imbalance towards older age classes is largely attributed to forest management activities in the mid 1940's to mid 1980's when effective fire suppression and limited harvesting reduced the area of mature forest that was disturbed and converted to young forest. Wood supply has also been reduced by Ontario's Living Legacy program, the implementation of the Natural Disturbance Pattern Emulation Guide (NDPEG), Ontario's Old Growth Policy, and marten habitat requirements.

Non-Timber Values Database

The OMNR retains responsibility for the sustainable management of non-timber values. To achieve this mandate it has implemented a standardized values database system known as the Natural Resource Values Information System (NRVIS). During the development of the 2006 FMP, it was determined that existing NRVIS information was not adequate for planning purposes. As a result, the planning team had to rely on values data provided by OMNR Chapleau District. In other parts of the province, the OMNR has also experienced difficulties in obtaining sufficient budgets to meet its commitment to inventory, monitor and update information on non-timber values. The impacts of an incomplete and/or inaccurate non-timber values database include the potential for inadequate protection of a value (if missed), unnecessary restrictions and loss of available forest for the forest industry (if inaccurate or out-of-date), and the need for numerous amendments to the plan as values are updated or discovered. The issue is discussed in Section 3.4.1.

High Potential Cultural Heritage Modeling

The "Timber Management Guidelines for the Protection of Cultural Heritage Resources (1991)" outlines a methodology to identify and protect heritage resource values during the forest management planning process. The *Cultural Heritage Predictive Model*, developed by the OMNR, was used to identify the location of high potential cultural heritage sites on the Pineland Forest. The model identified all water bodies on the Forest as having high potential cultural heritage value. This broad designation could have severely limited operational flexibility and fibre availability had a "net down procedure" not been adopted by the planning team. This procedure proved to be a costly and time consuming process.

Native Community and Native Value Issues

As part of the Forest Management Native Consultation Program (FMNCP) an option is provided for First Nations communities within, or adjacent to the Forest, to choose additional consultation and documentation opportunities. The objective of this program is to achieve a more equal participation by Aboriginal peoples in forest management and to ensure that Native cultural and spiritual values are considered and protected in the development of the plan. The Brunswick House FN, Chapleau Cree FN, Chapleau Ojibwe FN, Mattagami FN, Missanabie FN and Michipicoten FN have all expressed concern that their needs and requirements were not given adequate consideration in the past forest management plans. However, only the Chapleau Cree FN and Mattagami FN chose to participate in the FMNCP during the development of the 2006 FMP. As discussed in Section 3.2.3., all the First Nations did achieve some involvement in the FMP process through a First Nation Task Team (FNTT).

Staff Turnover

There were a number of staff reductions and changes at OMNR and Domtar during the development of the 2006 FMP. This created challenges for the delivery of the forest management program (Section 3.5.1.).

Woman River Complex Conservation Reserve

The implementation of Ontario's Living Legacy Land Use Strategy resulted in the creation of three new conservation reserves and one new Provincial Park on the Pineland Forest. One site C1564 - Woman River Complex Conservation Reserve mistakenly included private land in the designation. This resulted in a requirement for OMNR to locate a replacement site. At the time of the field audit potential candidate area(s) had been identified on the Pineland Forest which may serve to replace a portion of the area associated with C1564. However the process for regulating this replacement area remains on-going. The result has been that the area currently designated within C1564 has not been returned to the productive landbase (and hence wood supply calculation) and the proposed replacement area(s) have been excluded from forest management activities until a formal decision is made. We discuss this issue in more fully in Section 3.3.7.

Cottager(s) Concerns with Planned Allocations

At the Second Information Centre (Foleyet), a number of Ivanhoe Lake Cottagers objected to the proposed harvest of three stands (27 hectares) between Hwy 101 and the Bay Lake Road. This objection resulted in the deferral of the allocation from harvest. We are concerned that land use planning issues are increasingly and inappropriately being addressed through the forest management planning process. This issue is discussed in Section 3.2.2.

The Emulation of Natural Disturbance and Conflicting Management Direction

The direction of the Natural Disturbance Pattern Emulation Guide (NDPEG) where a maximum of 20% of the planned clearcuts can exceed 260 ha in size is difficult to harmonize with forest management guidelines for species such as marten which favour the harvesting of larger areas and discourages smaller-sized cuts that fragment the landscape. The requirement to meet these spatial requirements for planned clearcuts while allocating the full Available Harvest Area, (AHA) (by forest unit and age class) in operational blocks proved to be difficult without age class substitution (allocating younger than normal stands for harvesting).

Additionally, requirements for insular and peninsular residual patch retention and increased individual tree retention requirements may result in significant reductions to the available harvest area and wood volumes over successive planning periods, compounding the wood supply issue on the Forest.

Remote Tourist Operator(s)

The Pineland Forest supports a significant resource-based tourism industry. Forestry operations were planned in the vicinity of a number of tourism establishments or tourism values during the 2006-2026 FMP term. All the resource-based tourism (RBT) operators were provided with an opportunity to become involved in the Resource Stewardship Agreement (RSA) process intended to formalize the establishment of acceptable conditions for forestry operations in areas used by both industries. However, no RSAs were signed. This is discussed in Section 3.3.2.

3.0. SUMMARY OF AUDIT FINDINGS

3.1. Commitment

To meet the IFAPP commitment principle the SFL holder and OMNR are required to develop policy statements which include the organization's vision, mission, guiding principles, and codes of management practice. The corporate mission and vision documents and statements must be readily available to staff and reflected in daily operations.

The 2007 IFAPP allows the auditor to utilize evidence from other recent forest certification audits (Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI) and the Canadian Standards Association Sustainable Forest Management program (CSA-SFM)) where that evidence is current and sufficient to satisfy the requirements of the IFAPP. When a certification audit has met IFAPP requirements the IFAPP Commitment principle and the Human Resources criteria of the System Support principle (Section 3.5.1 of this report) are considered to have been met. The Pineland Forest received Forest Stewardship Council (FSC) certification (Certification Code: SW-FM/COC-1599) on August 10th, 2005. The most recent FSC annual surveillance audit was completed in March, 2007. That audit recommended the Pineland Forest remain certified. In our opinion, the IFAPP Commitment requirements have been met.

The FSC certification audit did not apply to OMNR and we therefore audited the OMNR for compliance with the IFAPP commitment principle. Corporate OMNR has produced a number of strategic directions to deliver on its goals, strategies, and actions. The most recent document is Our Sustainable Future (February, 2005) which contains a long term corporate vision of a "*Healthy environment through sustainable development*" and a mission of "*ecological sustainability*". It describes an operating philosophy and contains specific goals including a specific strategy for *"improved aboriginal relations through economic development opportunities and partnerships"*.

The OMNR had utilized a full range of training methods and materials to ensure employees were aware of their responsibilities and capable of carrying them out. Formal courses, presentations and a full range of communication methods (e-mail, bulletins, and formal meetings) were used to ensure staff were aware of corporate messages.

A Local Citizens Committee (LCC) was properly constituted and participated in the planning and implementation of forest management. We determined that both the OMNR and Domtar had an ongoing commitment to establishing positive working relationships with First Nations (Section 3.2.3).

We conclude that Domtar and the OMNR Chapleau District had met all requirements to develop corporate policy and directions related to sustainable forest management, and complied with applicable rules, regulations and statues governing forestry in Ontario. We are however, concerned that OMNR's stated commitments to forest management are being undermined by staffing and funding shortages that threaten its ability to deliver on its corporate goals and we discuss this issue in Section 3.5.1.

3.2. Public Participation

3.2.1. Local Citizens Committee

A Local Citizens Committee (LCC) must be established to help the planning team prepare the Forest Management Plan. Membership on the committee is to include local citizens representing a range and balance of community interests. Responsibilities of the LCC include ensuring the effectiveness of public consultation, assisting with the identification and analysis of management alternatives, participating in the development of values maps, monitoring the implementation of the plan, and providing advice to the District Manager (DM) on plan amendments and issue resolution. Each FMP must contain an LCC general statement of agreement or disagreement with the plan.

We reviewed all meeting agendas and minutes for the audit period and conducted interviews with eight past and present members of the LCC. In addition, Domtar and OMNR staff were asked to comment on the past activities and effectiveness of the committee.

The 2006 FMP contributors' page listed the LCC members. Their affiliations effectively covered the range of community interests including cottagers, independent loggers, trappers, youth representative, municipal representative, local business, naturalist, angler and hunter, remote tourist operator, snowmobile, canoeists, forest industry and a general public representative. The absence of a First Nation representative was notable considering that six First Nation communities had indicated an interest in the 2006 FMP.

Throughout the 2001-2006 period, the OMNR and LCC made numerous efforts to obtain effective First Nation representation on the LCC with no success. However, the development of a First Nations Task Team (FNTT) to provide input to the 2006 planning process for the development of the Pineland and Martel Forest FMPs was very successful (discussed in Section 3.2.3). We were informed by several First Nation contacts that involvement in the FNTT was preferable to the LCC in that the task team focused exclusively on First Nation issues. These individuals also perceived aboriginal involvement in the LCC as "*...reducing First Nations to the status of just another stakeholder* ". This perception, despite the efforts of the LCC and OMNR, effectively precluded aboriginal involvement in the LCC.

The Committee's Terms of Reference (TOR) was revised in 2004 as required by the 2004 Forest Management Planning Manual (FMPM) and throughout the audit period LCC functions were generally in adherence with the TOR. For example, for the 2006 FMP the LCC received the list of required alterations from the draft FMP review and was provided with the opportunity to review and submit comments. It was also heavily involved in developing public consultation recommendations and had representation at the Information Centers. It was involved in the identification and analysis of management alternatives, the review of values maps and an LCC member participated on the planning team.

With respect to the implementation of the 2001 FMP, the LCC reviewed and commented on Annual Work Schedules (AWS), slash pile management, spray program issues and compliance on the Forest. The District Manager consulted with the LCC in formal issue resolution reviews, and for individual environmental assessment requests (IEA).

Our review of LCC minutes indicated that although meeting attendance varied (average 4-6 members in attendance) a quorum was attained for most meetings. Domtar and OMNR staff were present as advisors and presenters at all meetings. The majority of the LCC members had been on the LCC from 2001 to 2006. A core group (3-4) of very experienced members attended the vast majority of meetings. However, we did note that one committee member, while on the Committee for the past 5 years, had attended less than 10 % of the meetings. Membership carries with it the responsibility for communicating with, representing and reporting back to a specific segment of the community. We are concerned that this responsibility was not met. The TOR provides a mechanism to remove persons from the committee for poor attendance and we provide the following recommendation to the OMNR.

Recommendation #1:

The Chapleau District Manager should review the LCC membership list and remove those members who habitually show no interest in attending LCC meetings and make no effort to participate in LCC business/functions.

The LCC statement in the 2006 FMP is that "*…we are in general agreement to accept the final stages of the forest management plan 2006-2026 and recommend its approval.*" Our overall assessment is that the LCC had a core of experienced and dedicated members who did an excellent job of achieving FMPM purposes. Both the OMNR and Domtar were responsive to the LCC and worked cooperatively with its members. We have completed a number of IFAs and examined the functioning of numerous LCCs. In our opinion, the Pineland LCC is one of the more active and effective LCCs we have encountered.

3.2.2. FMP Standard Consultation Process

The FMPM requires that public consultation opportunities be provided during the forest management planning process. These opportunities are to include an invitation to participate in the planning process, two public information centres, the opportunity to review the draft plan and inspect the approved plan. The public must also be given opportunities to access the OMNR issue resolution process and to request a Ministry of Environment (MOE) Individual Environmental Assessment (IEA) of a specific proposed forest management activity.

The public consultation process associated with the development of the 2006 FMP complied with FMPM requirements. Public notices were issued with sufficient lead time, their contents were complete and an appropriate mix of communications media (including newspaper notices and direct mailings) was utilized. Material presented at the information centres met prescribed standards, a list of required alterations was available to the public during the public review of Draft Plan and Environmental Registry notices were issued as required.

Issue Resolution and Individual Environmental Assessment

Opportunities for accessing the issue resolution process and for requesting the Minister of the Environment to designate that "*specific proposed forest management activities*" undergo an IEA were clearly identified in public notices.

Four IEA requests were submitted to the MOE during the audit period, however three did not proceed (2 were withdrawn and one was mitigated by Domtar and the proponent). The remaining request that was centered on harvesting and herbicide use in the vicinity of tourism water bodies proceeded.

Submission of the IEA request that proceeded occurred just prior to plan approval. The proponent had not participated in the available planning/communication processes and did not request issue resolution.

We found that all IEA request procedural requirements were followed by MOE, OMNR and Domtar, although the OMNR's response to MOE required six months to prepare due to the complexity of the issue. The MOE decision (March 2007) found that the concerns and issues raised by the proponent had been, or would be addressed by the OMNR and as a consequence the IEA request was denied.

The disposition of the IEA request delayed forest operations for approximately seven months. The deferral of forest management activities resulted in financial costs to Domtar, its contractors and others dependent on the Forest for part or all of their livelihoods. Silvicultural treatment backlogs and losses in investment in site preparation and forest renewal occurred as a result of the delay of operations. The forest industry submitted financial impact statements which identified substantial economic costs associated with the IEA process.

While all IEA procedural requirements were met by the applicant, MOE and the OMNR, and we recognize an individual's right to request an IEA regardless of the level of participation in the planning process we are concerned that;

- The IEA request process resulted in significant negative economic impacts.
- Some of the issues may have been avoided if the steps in the planning process designed to develop compromise agreements had been fully utilized.
- The timing of the IEA request negated much of the communication and consensus development work by the LCC, OMNR and Domtar that had occurred throughout the planning process.
- Local communities bore the brunt of economic hardship from the IEA request when the issues were/are clearly provincial in scope.
- The uses of chemicals in forest management and guidelines for application have been fully reviewed and have received government approvals. There does not appear to be a process to quickly dispose of IEA requests for issues that have already been repeatedly addressed at the provincial level.

In 2006, the Minister of the Environment initiated changes to the environmental assessment (EA) program. One of the changes was to speed up the process by permitting the Director of the Environmental Assessment and Approvals Branch (EAAB) to make decisions on IEA requests. In addition, there were a number of administrative changes to provide clarity, remove redundancies, consolidate requirements and ensure consistency. While we applaud measures to improve the efficiency of the EA process, we are not convinced that these changes would have substantially improved the issues we have raised.

We provide the following recommendations to address our concerns.

Recommendation # 2:

Corporate OMNR should encourage the Ministry of the Environment to explore mechanisms that require participation in the FMP planning process as a pre-requisite to entry into the Individual Environmental Assessment process.

Recommendation #3:

Corporate OMNR should encourage the Ministry of the Environment to explore mechanisms that would consider Individual Environmental Assessment requests at a scale appropriate to the concern (i.e. local vs. provincial).

3.2.3. Native Peoples' Consultation

The FMPM requires that native communities be provided with the option to choose an additional consultation and documentation opportunity with respect to forest management planning, referred to as the Forest Management Native Consultation Program (FMNCP). In addition, OMNR District Managers are required to conduct negotiations with native communities to identify and implement ways of achieving more equal participation by aboriginal peoples in receiving benefits from forest management.

The following First Nations expressed interests on the Pineland Forest and indicated a desire to be involved in the forest management planning process for the PF:

- Brunswick House First Nation
- Chapleau Cree First Nation
- Chapleau Ojibwe First Nation
- Mattagami First Nation[2]
- Michipicoten First Nation
- The Missanabie Cree First Nation (currently without a reserve)

The communities were sent notice(s) advising of the development of the 2006 Pineland FMP, inviting their participation in the preparation of Native Background Information Report(s) and offering an option to participate in the standard public consultation process or the Forest Management Native Consultation Program (FMNCP). Members of each First Nation were also offered a seat on the forest management planning team. Initially Brunswick House, Chapleau Cree, Michipicoten and Mattagami First Nations identified representatives to participate on the planning team.

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[2] Prior to the management unit boundary change associated with the amalgamation of the J.E. Martel Forest with the Superior Forest (2005) all of the communities were geographically adjacent to the Pineland-Martel Forest (with most situated in closer proximity to the Martel Forest). Following the boundary change, only the Mattagami First Nation remains adjacent to the Pineland Forest.

OMNR staff identified concerns with the level of participation of First Nation representatives on the planning team (e.g. silence during meetings) and initiated discussions with some First Nation representatives to find a better option for their involvement in the planning process. The concept of a First Nation Task Team (FNTT) was developed and accepted by the parties. With the formation of the FNTT the task team members elected to deal with both the Superior-Martel and Pineland FMPs. The Chapleau Ojibwe did not have a representative on the FNTT due to capacity issues. It was agreed that OMNR staff would ensure the Chapleau Ojibwe's input would be brought to the FNTT and included in reports.

Each FNTT representative brought their community perspectives related to forest management planning to the table. The FNTT was funded by the planning process and operated in parallel with the FMP planning team. At the onset, the FNTT identified priority work areas which included the identification of FMP objectives from their perspective, the identification of values and the development of values prescriptions. The team's work was grounded in Medicine Wheel teachings that provided a "*…holistic foundation for human behaviour and interaction.*" Our interviews revealed that the process was pragmatic and results focused and helped the members to merge their cultural approach towards planning into the FMP process.

Two individuals were designated to represent the FNTT at the FMP planning team meetings. FNTT members were involved in the development or updating of their respective communities' Native Background Information Report. To a lesser degree they provided input into the Report on the Protection of Identified Native Values. The development of values information was primarily focused within individual communities with varying results. The Background and Values information for all the FN's was merged into two reports with separate sections for each of the communities.

We were informed that with respect to identifying specific values on a map there continues to be a "trust "issue with OMNR; however, our assessment is that Chapleau OMNR staff have made significant progress in establishing dialog and respect in this regard.

The FNTT met on twelve occasions over the two year period of the development of the FMPs. The Task Team was a proactive and innovative approach that appears to have resulted in some significant gains with respect to communications, including cross-cultural communications. We are of the opinion that the process worked as well as it did for number of reasons including:

- The OMNR had several employees who were known by First Nation leaders and community members (one was an aboriginal).

- Involved Domtar staff were known by the First Nations and had a history of relatively positive working relationships.
- The FNTT had a paid consultant who functioned as a team leader and facilitator.
- Funding was provided to cover travel and other expenses.
- First Nation representatives had a degree of comfort and familiarity with other aboriginal team members that encouraged dialogue.
- The cooperative ventures with respect to Background information and Values Reports (assisted by OMNR and Domtar) increased the individual community's capacity and effectiveness.

While the FNTT concept which brings differing cultural backgrounds and perspectives together to work on common issues and tasks is not new, we believe that the Chapleau District process was well done and we therefore identify its implementation and management as a best management practice.

Best Management Practice:

The Chapleau District's First Nation Task Team is a proactive and innovative approach to cross cultural communications in forest management planning. The FNTT was a positive influence in bringing forward aboriginal perspectives in the development of the 2006 FMP.

We note that the FNTT agendas and discussions did include recommendations for "*…value types and area of concern prescriptions.*". The FNTT reviewed other FMP's and canvassed other FN communities to determine what they had identified as values. The Task Team then discussed those values, and discussed protection measures for implementation. Measures were determined for values which had not been identified on the Pineland Forest in anticipation that if they were encountered during the development of future plans OMNR and Domtar would be aware of the cultural area of concern requirement. For example, the FNTT discussed culturally modified trees (e.g. coin tree, tie tree, planking tree, frustration tree) with a suggested 30 metre no cut buffer from the perimeter. Another identified value is a *"moose burial ground"*.

The participation of First Nations in this type of detailed cultural area identification requires that OMNR anticipate and accommodate requests for different types of value recognition and extended protection in future planning processes. At the same time OMNR will have to be cognizant of potential operational and cost constraints associated with their implementation. In our view, the Cultural Heritage Guidelines (1991) used for the development of the 2006 FMP are somewhat vague with respect to verification requirements and conditions for acceptance by planning teams. OMNR's revised cultural guidelines (applicable in 2007) do provide more detail but, in our view, are still vague with respect to acceptance and verification for values that are not commonly known or documented (e.g. moose burial grounds). OMNR should be prepared to provide local planning teams and First Nations with clearer directions and parameters.

Suggestion #1:

Corporate OMNR should review how it will respond to different types of First Nations values information, including verification parameters and acceptable costs. That information should be provided to planning teams.

While the FNTT provided one avenue of input to the planning process the normal FMP communication process also continued. All the First Nations were contacted individually and advised of the First Information Centre and the opportunity for separate consultation. Chapleau Cree First Nation was the only one that requested a community meeting and it was held in January, 2005. They were all contacted by the OMNR to determine if a Second Information Centre was required for their community. Mattagami First Nation requested a community meeting and it was held in July 2005. In November 2005 all the FN's were all provided the opportunity to review the draft plan and associated operations maps.

Our investigations indicated that all FMPM First Nations planning requirements had been met.

The Chapleau OMNR was also successful meeting Class Environmental Assessment Condition 77 and Condition 34 obligations which require it to identify and implement ways of achieving more equal participation by Aboriginal peoples in the benefits provided through forest management planning. The Chapleau OMNR and Domtar had been proactive in approaching and engaging local First Nations in a variety of ways. These included negotiated agreements to enhance communication and education, the provision of employment and business opportunities and assistance with the documentation of First Nation values information. Appendix F provides a list of the activities undertaken and/or completed over the audit term.

There is clear evidence that;

- First Nations are actively engaged in resource management planning in the Chapleau District. The FNTT was a positive influence in bringing forward aboriginal perspectives in planning.

- Chapleau OMNR, Domtar and aboriginal leaders, through trial and error, are finding ways to work cooperatively.
- First Nations are gaining the experience to operate successful forestry businesses as the capacity, knowledge and political will within each community increases.

It is our assessment that;

- Terms and Condition 77 and 34 were met and that OMNR and Domtar have directly and indirectly been utilizing available opportunities to enhance First Nation benefits from forest management.
- Domtar demonstrated a serious commitment towards involving FNs in its operations.
- All FMPM requirements for the notification and involvement of FN in the forest management planning process were met.

3.2.4. Annual Work Schedule Public Inspection

The FMP Annual Work Schedule (AWS) is produced every year to guide the implementation of operations. It lists operations which were approved in the FMP and are scheduled for implementation for that year. The LCC and the public must be given an opportunity to review the AWS.

All AWS's were reviewed by OMNR district staff and by the LCC. All 1996 FMPM and 2004 FMPM content and timing requirements for Public Notices of Inspection of the approved AWS and aerial herbicide, prescribed burns were met. Mining companies were notified of the planned AWS activities.

3.3. Forest Management Planning

3.3.1. Planning Team Activities

The FMPM requires that the District Manager appoint the Chair of the planning team. The Plan Author must be a Registered Professional Forester (R.P.F.) and the planning team must represent a wide range of natural resource expertise. A Terms of Reference must be developed by the Plan Author and approved by the OMNR District Manager and the Regional Director (RD). It must identify the tasks required for the preparation of the plan and identify the responsibilities of planning team members. A detailed timeline must be established. Planning team members must be available to answer questions from the public.

The planning team consisted of a Plan Author/Chair who was an R.P.F., area foresters, biologists and technicians, a planning forester, OMNR First Nations liaison officers, First Nations representatives and an LCC representative. Other areas of expertise required for planning (e.g. parks, lands administration, cultural heritage and compliance) were provided by a support team and an extensive list of plan advisors drawn from OMNR, Domtar staff and other Ontario Ministries. A Terms of Reference was approved by the District Manager and the Regional Director.

A review of the planning team minutes, task team reports and interviews with team members demonstrated that the planning team had good attendance and operated effectively. Planning efficiency was enhanced with the creation of "task teams" (e.g. SFMM, First Nations) which worked in between formal meetings of the planning team.

Planning fell behind schedule early in the process due principally to issues of staffing capacity at Domtar and OMNR. Also, removal of the Martel portion of the Pineland land base in February 2005 (three months following the First Information Centres), resulted in the planning team having to update the planning land base and related modeling calculations. As a result, the plan was approved somewhat late (May, 2006); however implementation of operations was delayed primarily by the time required to resolve the IEA request for the Pineland Forest (discussed in Section 3.2.2).

OMNR delivered the required background information and support to the planning team. However, the values information that existed was not adequate for planning purposes due to inaccuracies in the NRVIS database and as a result, the planning team had to rely on values data provided by OMNR Chapleau District. While planning requirements were met there was an issue with respect to the maintenance of values information throughout plan implementation. This topic is discussed further in Section 3.3.7.

The Plan Author and OMNR were diligent is responding to public inquiries and comments. A 10% sample of the correspondence file was reviewed to determine if inquiries were responded to in a timely manner. The review indicated that correspondence was well documented and responses were on time.

3.3.2. Resource Stewardship Agreements

Every FMP must include a statement confirming a commitment to maintain the viability of the tourism industry and to establish a level of remoteness as recognized in the Tourism and Forestry Industry Memorandum of Understanding (MOU). Every reasonable effort must be made to pursue the development of Resource Stewardship Agreements (RSA). RSA provisions that directly affect the FMP must be incorporated into it.

The FMP supplementary documentation indicated that extensive efforts were made by the OMNR and Domtar to pursue RSA development. The FMP objectives and related strategies confirm a commitment to maintain the viability of the tourism industry and OMNR provided updated tourism values mapping. Domtar kept a comprehensive file of correspondence and discussions with individual tourism operators, government agencies and other parties.

Domtar was provided with a list of resource-based tourism establishments by the Ministry of Tourism (MOT) and invited all licensed resource-based tourism establishments to become involved in the RSA process. MOT followed up with a letter to tourist operators, the OMNR provided a scoping session, and due to poor participation, a supplemental meeting with operators was arranged. Six operators initially expressed interest; however no RSA were developed. Although no agreements were achieved, the discussions with tourism operators did result in better identification and protection of their values in the 2006 FMP.

Our discussions with Domtar and the OMNR indicated that the RSA process was poorly timed in that operators only became interested when planned operations became apparent, and they preferred informal arrangements over the formal (RSA) process.

We offer the following suggestion to address this issue.

Suggestion #2:

Corporate OMNR should review the RSA process as it would benefit from a more streamlined approach and a modification of timing of tourism consultations.

3.3.3. Source of Direction

The planning team and the LCC were provided with all relevant policy, guidelines and strategic direction required to carry out their planning responsibilities. Related documents were listed in the Terms of Reference, and analyses, updates and interpretation notes were contained in the FMP appendices. Approved FMP operations including prescriptions, road locations, monitoring programs and exceptions were documented correctly in the AWS and carried out in the field.

3.3.4. Introduction

The FMP introduction contained a properly prepared and signed statement of how OMNR's Statement of Environmental Values (SEV) under the Environmental Bill of Rights was considered in the preparation of the Plan. As required, an index to the environmental assessment components of the plan was included.

3.3.5. Management Unit Description

The description of the Forest in the FMP met FMPM requirements and provided the necessary context for forest management planning and decision making. Information was provided on the administration, geology, current and historic forest condition, management unit history, and the other forest resources (e.g. wildlife) of the Pineland Forest. Tables in the text adhered to FMPM required formats.

The original digital forest resource inventory (FRI) was prepared in 1995 (based on 1992 aerial photography). This inventory was updated to reflect all depletions, estimated depletions (there were three years of depletions remaining on the 2001-2006 FMP when the planning layer for the 2006 FMP was created) and changes in forest cover type to March 31st, 2006. Domtar made effective use of its Geographic Information System (GIS) database during the inventory update process. The FRI was updated as required for effective planning and met all Forest Information Manual (FIM) and FMPM requirements. In addition to the completion of the FRI, a Forest Ecosystem Classification (FEC)[3] was developed for the Forest. The FEC was based on a data from a variety of sources including the FRI, topography data (from a digital terrain model) and soils data from District soils maps.

The 2006 FMP addresses the full range of non-timber values, including cultural heritage sites, native values and critical wildlife and fisheries habitat. It describes the appropriate guidelines and manuals that provided direction on protection and mitigation. It contains a full description of locally featured species, as well as those that are rare, vulnerable, threatened, or endangered. It provides objectives and strategies to support wildlife and fisheries, as well as information on the status of habitat for different species. The preferred habitat is described for various species based on provincial guidelines and manuals.

As required by the FMPM, the management plan contained a description of the socio-economic attributes of the Northeast Region, and the Chapleau and Timmins Districts.

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[3] Northeastern Ontario has a method of identifying, describing and classifying mature forest ecosystems. Vegetation and soil information is used to classify forest communities into Ecosite Types that identify groupings of vegetation on specific ranges of soil conditions. FEC is used in forest management planning to develop prescriptions for timber harvesting and forest renewal; it is also used in determination of preferred habitat for wildlife.

3.3.6. Objectives and Strategies/Management Alternatives[4]

The FMP must establish direction for managing the forest to achieve forest sustainability which is defined as "*long term forest health*". Legislation and policy, resource management issues, the current state of the forest and the desired future forest condition all influence the strategic direction of the FMP. These factors are to be considered by the planning team and the LCC in the development of objectives.

A range of management alternatives is to be developed by the planning team with the assistance of the LCC. The management alternatives are compared to determine how they meet requirements for forest sustainability and how they provide benefits from the forest (e.g. employment, wood fibre).

Approach:

With the assistance of the LCC, First Nations and scientific advisors, the planning team took the following steps in developing a logical approach to identifying objectives, strategies and management alternatives. They:

1. Reviewed the current condition of the Forest.
2. Defined a Desired Future Forest Condition.
3. Identified Objectives, Targets and Strategies to move toward the defined Desired Future Forest Condition.
4. Created different management approaches (Alternatives) to meet the Objectives, Targets and Strategies.
5. Selected the Management Alternative which best met the Objectives, Targets and Strategies.

Objectives and Targets:

In past IFAs, we have noted that non-technical participants (e.g. LCC, First Nations) often experience difficulties in fully understanding the development of objectives, targets, strategies and management alternatives. This lack of understanding often makes it difficult for them to meaningfully contribute to the process.

The planning team addressed this issue by developing a questionnaire to record LCC, Planning Team and First Nations' concerns and visions for the Forest. Responses were combined in a table (with related targets and strategies) and organized according to the four CFSA objective types. The table defined a sequence of considerations which lead to the development of the specific plan objectives, targets and related strategies in a clear and logical format. We found the table approach facilitated understanding of the complex linkages amongst planning elements and commend the planning team on its approach to facilitate understanding.

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[4] A management alternative is a combination of objectives and associated strategies required to achieve those objectives.

Management Alternatives:

Five management alternatives (including the three mandatory alternatives required by the FMPM) were developed and analyzed for the development of the FMP (Table 3). The three mandatory alternatives (A, B, C) were designed to examine the capability of the Forest to produce an industrial wood supply and to calculate associated management efforts; the additional two alternatives (D, E) varied the timber production objectives. In all alternatives the non-timber objectives and targets were kept constant. A "natural run" of how the forest might develop over time in the absence of human intervention was also developed and analyzed. This run served as the benchmark against which the five alternatives could be assessed. All alternatives were compared at the non-spatial level, and as required, the selected management alternative was also assessed spatially (landscape pattern indices) to test for sustainability.

TABLE 3. 2006 PINELAND FOREST MANAGEMENT PLAN ALTERNATIVES.

Management Alternative	Alternative Purpose
"A"	Assess the timber production potential of the forest based on available revenues for silvicultural funding (a mandatory alternative).
"B"	Assess the timber production potential based on the assumption that all required silviculture funding is available (a mandatory alternative).
"C"	Provide for the anticipated industrial demand for timber with an unlimited budget (a mandatory alternative).
"D"	Meet industry demand for timber with limited volume flow control and a level of silvicultural funding available from the Forest Renewal Trust Fund and a balanced, realistic silviculture program.
"E"	Meet industry demand for timber with tighter volume flow control and a level of silvicultural funding available from the Forest Renewal Trust Fund and a balanced, realistic silviculture program.

The text of the FMP contains a thorough description of the land base inputs and assumptions used to develop Sustainable Forest Management Model (SFMM) inputs for forest dynamics and silvicultural options. We found all model inputs to be reasonable, based on the best available information and well substantiated. To support the SFMM analysis, fifteen scoping runs were undertaken to examine modeling inputs and constraints, and provide rationalization for the SMA. The outputs from SFMM supported the analysis of the management alternatives and the goal of sustainable forest management.

It is our assessment that the planning team met FMPM requirements for the development of management alternatives and that the SFMM modeling was well done.

Evaluation of the Selected Management Alternative:

The planning team selected Management Alternative "E" as the preferred management alternative. The SMA:

- Is expected to keep landscape diversity and wildlife habitat areas within the bounds of natural variation.
- Scored highest for indicators of sustainability.
- Met wood supply objectives sufficiently well to ensure relatively stable social and economic benefits.
- Showed movement towards the natural disturbance template and ensured maintenance of mature and over-mature age classes.
- Included adequate funding for anticipated silviculture activities.

The FMP rationalizes the selection of the SMA in terms of both the SFMM and SEIM analysis. The plan text provides highlights from the scoping analysis to assist in the comparison of results and provides an additional level of clarity and understanding for the selection of the SMA. The inclusion of scoping run highlights is commendable as it provided readers with a greater level of insight and comprehension into the results of the wood supply analysis.

Even though the SMA ranked last in terms of economic and social outputs, it offered the most stringent volume flow controls and best addressed OMNR concerns over drastic reductions in the future wood supply. We agree with the finding that the SMA supports the goal of sustainable forest management based on its ability to achieve the indicators of sustainability and meet objectives.

3.3.7. Operational Planning

Operational planning selects areas for harvest, tending and renewal operations for the five-year term of the forest management plan. Preferred silvicultural treatment packages and the silvicultural ground rules are identified and prescriptions to protect specific values are developed through Area of Concern (AOC) planning. Locations of primary and secondary road corridors are also determined.

Our record review and interviews with Domtar and OMNR staff indicated that adequate information was available for planning AOC requirements. Alternate methods of operations were considered to support the protection of the AOC.

Several exceptions to the specific direction outlined in implementation guidelines were proposed. For example, the management guideline for Osprey requires an 800-metre radius AOC measured from the nest tree. Specifics include a 200 meter totally protected zone, and a 600 meter zone where harvesting and timing conditions apply. Osprey Guide revisions are being made by OMNR to reflect new research findings; however, at the time of final plan submission the revisions had not received approval. As a result, the planning team modified the AOC prescription to incorporate the coming revisions. The modification was an exception and a monitoring program was developed based on directions contained in the "Monitoring Protocol for Clearcut Harvesting Around Osprey Nest Sites in the Boreal East, Outside the Timing Restriction Period".

Our review of reports, supplemental aerial and field observations determined that harvesting and silvicultural activities were appropriate, and values within AOCs were protected. A more detailed discussion on AOCs is included in Section 3.4.1.

The Silvicultural Ground Rules (SGRs) were developed according to appropriate guidelines with one notable exception. The 2001-2021 FMP contained a prescription for the commercial thinning of natural stands of jack pine which is currently "not recommended" as a silvicultural treatment and as a result a monitoring program was established. However, no commercial thinning operations in jack pine were conducted on the Pineland portion of the PMF or the Pineland Forest during the audit period. The Silvicultural Treatment Packages (STPs)[5] were appropriate for forest types and included the silvicultural system, the harvest method, renewal, tending treatment and regeneration standards and targets. Forecasted renewal activities were consistent with those projected from SFMM, and supported the achievement of FMP objectives. For the 2006-2011 term, the forecasted levels of harvest (both area and volume) and renewal were sufficient to provide for the achievement of the plan objectives. Contingency area planning requirements were met. Areas selected for forest management activities were generally consistent with the selection criteria described in the FMP and the level of available harvest area for the SMA. However, some age class substitutions were required in order to meet marten core habitat requirements.

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[5] Silvicultural Ground Rules (SGRs) specify the silvicultural systems and types of harvest, renewal and tending treatments that are available to manage forest cover and the type of forest that is expected to develop over time. A silvicultural treatment package (STP) is the path of silviculture treatments from the current forest condition to the future forest condition; STPs include the silvicultural system, harvest and logging method(s), renewal treatments, tending treatments, and regeneration standards.

A significant drop in available softwood and hardwood volumes is anticipated over the next 40 years as a result of the existing age class structure of the Forest. This age class imbalance is largely attributed to forest management activities in the mid 1940's to mid 1980's when effective fire suppression and limited harvesting reduced the area of mature forest that was disturbed and converted to young forest. The wood supply has also been reduced by Ontario's Living Legacy program, the implementation of the Natural Disturbance Pattern Emulation Guide (NDPEG), Ontario's Old Growth Policy, and marten habitat requirements. The projected supply issues are also compounded by an increasing demand for hardwood from the Forest. This increased demand resulted in revised hardwood supply commitments (non-veneer quality aspen and white birch) for OSB facilities and all marketable aspen volume has been committed to local industries.

Ministerial wood commitments were established that are currently higher than the projected poplar wood supply. The Plan Author indicated that *".neither the past or current wood supply could achieve the… commitment level of 188,100 cubic metres per year so it is not clear what information this commitment was based on"*. The poplar commitment was based on volume forecasts in the 2001 FMP and an existing 1998 supply agreement commitment. We were informed that while it may become more difficult to achieve commitment target(s) with the passing of time, the commitments still need to be recognized in FMPs and considered when scoping the alternative management scenarios. Planning teams are informed that they do not have to achieve the target volumes and commitment documents contain a proviso that the attainment of the target volume is dependent on FMP availability. We believe that commitment targets in excess of available supply are confusing for the public particularly when viewed in the context of stated objectives of a sustainable wood supply and/or sustainable management objectives. The continual revision or development of new forest management guidelines further diminishes the prospect that such targets will be achieved. We provide the following recommendation to address this concern.

Recommendation #4:

OMNR should review and revise Ministerial wood commitments for aspen from the Pineland Forest in the context of projected wood supply and with due consideration of the wood supply implications arising from the implementation of the various forest management guidelines.

The PF has a significant amount of area which currently provides suitable marten habitat conditions; however, much of this available habitat is fragmented by both natural and man-made disturbance. The marten guidelines require that suitable marten habitat be arranged in core habitat areas between 30 and 50 km^2 in size and that a minimum of 75% of the core habitat should be comprised of suitable stands.

The fragmented nature of the habitats made it extremely difficult to achieve these conditions, resulting in a decision to maintain 10% of the capable marten habitat area over the next sixty years. We understand that strategies which deferred more than 10% of capable habitat resulted in significant and unacceptable declines in the social and economic benefits. The 10% target resulted in 57,118 hectares of land being deferred from forest management (for habitat protection) over the next sixty years. This deferral amounted to an annual wood supply reduction of 52,487 m^3 of SPF and 16,017 m^3 of poplar. We concur with the approach adopted by the planning team, as it provides a suitable balance of habitat and socio-economic benefits; however, we also note that these reductions exacerbate predicted wood supply shortages most dramatically in approximately 40 years when the wood supply shortages are at their most critical level.

The implementation of Ontario's Living Legacy Land Use Strategy resulted in the creation of three new conservation reserves and one new Provincial Park on the Pineland Forest. One site, C1564 - Woman River Complex Conservation Reserve mistakenly included a significant amount of mining patent land within the designation. This circumstance resulted in a requirement for OMNR to replace the entire site elsewhere. A significant amount of effort has been undertaken by OMNR to identify suitable replacement site(s). Potential candidate replacement area(s) have been identified and the process for regulating this area is on-going (i.e. consultations on land use amendments and the drafting of regulation plans). Currently, C1564 has not been returned to the PF productive land base and interim protection measures including the exclusion of forest management activities have been implemented for the replacement areas pending a formal decision on the their status. For the forest industry this circumstance has implications for the wood supply as forest management cannot occur within the boundaries of C1564 or the proposed replacement sites. We provide the following recommendation to address this issue.

Recommendation # 5:

OMNR must complete regulation of the C1564 replacement areas in time for the preparation of the 2011 Pineland FMP.

3.3.8. Plan Review, Approval

The FMPM requires that the draft FMP be submitted for OMNR and public review, and alterations required by the OMNR must also be made available to the public. The draft and final plan must be certified by the Plan Author, and the final plan must be certified by the OMNR District Manager and approved by the OMNR Regional Director.

Staffing issues at Domtar and OMNR and removal of the Martel portion of the Pineland land base while planning was underway resulted in late approval of the Plan (May, 2006). All other FMPM requirements were met.

3.3.9. Plan Amendments

There were16 amendments to the 2001 FMP (all administrative) and 43 AWS revisions. The 2006 FMP required five amendments (4 administrative, 1 minor) and there were seven revisions to the AWSs. Most amendments and revisions were related to the discovery of new values during operations.

Documentation was complete and FMPM procedural requirements including consultation were met.

3.3.10. Contingency Plans

There were no contingency plans during the audit term.

3.3.11. Annual Work Schedules

Forest management activities planned in each Annual Work Schedule were consistent with those outlined in the relevant forest management plans. All AWS's reviewed conformed with the required format and specifications of the FMPM or phase-in requirements in effect at the time of AWS preparation.

Forest Operation Prescriptions were prepared for all harvest, renewal, tending, and protection activities, as required. Prescriptions were consistent with the relevant FMP SGRs.

At the time of the 2006-07 AWS submission the 2006 FMP was approximately five months behind schedule and in the Draft Review Stage. In order to conduct silvicultural activities prior to plan approval, Domtar requested and received a CFSA Exemption Order. The 2006-2007 AWS was revised to include;

- areas of the 2006 FMP deemed to be non-contentious,
- areas that were not part of the Individual Environmental Assessment request,

- areas determined to be non-contentious through consultation with individuals involved in the FMP issue resolution processes.

The herbicide program for 2006 was not carried out and the number of blocks approved for harvest was reduced as a result of the IEA request.

3.4. Plan Implementation

3.4.1. Areas of Concern

An Area of Concern (AOC) is a defined geographic area, within an area selected for forest management activity which is adjacent to an identified value on the Values map. It represents an area where forest operations will be reviewed, controlled, modified, or excluded, as required to protect the value associated with the area.

We completed a field examination of AOC's associated with our field inspection sites, supplemented by other sites encountered while travelling in the Forest (e.g. nests, buffers adjacent to bridges). We had supplementary aerial photography for all sites, which allowed an overview of buffers adjacent to treated areas. Prior to our field inspections, we reviewed AOC prescriptions in the 2001 and 2006 FMPs, AWS's and the FOPs.

Exceptions in the 2001 FMP included clearcut size, commercial thinning of jack pine and harvesting around osprey AOC's. The 2006 FMP included exceptions with regard to clearcut sizes and osprey AOC's. District Manager Certification and full explanations and rationales for the exceptions were included in the Supplementary Documentation of the FMPs.

All potentially affected tourism facilities were assigned an AOC prescription to mitigate the effects of forestry operations. The 2006 FMP contains three general prescriptions for tourism facilities which provide varying levels of mitigation. Those prescriptions were developed in consultation with various resource-based tourist operators and were utilized in the past FMPs with some success.

The FMP identifies cultural heritage values that include: cultural landscapes, structural remains, archaeological remains, and traditional use sites. The 2006 planning team utilized archaeological information gathered for the 2001 FMP and the Heritage Assessment Tool (H.A.T.) to identify the location of High Potential Cultural Heritage (HPCH) sites. The FMP contains a description of the process used to confirm HPCH sites and relevant maps are included in the FMP.

First Nation values were collected from the Report on the Protection of Identified Native Values. For example, the Mattagami First Nation identified three cultural sites which were protected in the planning process. Native values were also reported directly to the Plan Author by Band officials.

Domtar staff notifies the OMNR of values it locates that were previously unidentified, incorrectly mapped, or no longer exist. At the 2006 FMP information centres the values maps were displayed to solicit additional values information from the public and First Nations. The LCC minutes indicate that values maps were reviewed and First Nation communities were asked to identify their values for potential future protection.

The 2002 IFA on the Pineland-Martel Forest resulted in a recommendation that corporate OMNR "... *should fulfill its obligations to provide accurate and timely values information for use in forest management.* " OMNR funding continues to be limited. Priority for values collection is given to those FMP's that are under development in order to meet OMNR obligations related to forest management planning. In the opinion of interviewed OMNR and Domtar staff, the current values database is inadequate. The Chapleau District received values collection funding in 2003-2004 and 2004-2005; however, no values funding was allocated in 2005-2006 or 2006-2007. We note that the District has been innovative and opportunistic in its efforts to meet its values information obligations. For example, a Quebec-Ontario Student Exchange program and high school co-op placement programs were used to review files and conduct interviews to gather cultural heritage information. While admirable, we feel these types of programs involve inexperienced people, lack scientific rigour and do not adequately address OMNR's responsibilities.

A district protocol for values collection involves district staff routinely looking for and identifying values when in the field. However, we also note that the 2002 IFA contained a recommendation that local OMNR should be assigned *"field time targets ... that require them to spend enough time in the Forest to ensure their working knowledge of the local forest conditions remains accurate."* While the District did establish field time targets for some individual staff, our investigations and review of the 2002 IFA Status Report indicate that OMNR staff still spent very limited time in the field. There were four different biologists on the Forest during the audit period, the last of which indicated that he did not get in the field nearly enough (i.e. he participated in only one values flight in 2.5 years). The constant change in staff also made it impossible for any of the biologists to obtain an in-depth understanding of the Forest. Tables 4 and 5 (Section 3.5.1.) illustrate the significant number of OMNR staff changes that occurred during the audit term. These factors give us concern as to the role OMNR staff play in identifying new values and fulfilling their role in the implementation of guides such as the NDPEG.

The OMNR is fortunate in that it has dedicated and resourceful staff, and our assessment is that it did manage to meet its CFSA obligations to provide non-timber values information for the 2006 planning process; however, the long term combination of staff shortages, staff changes and chronic funding shortages is a serious concern that could potentially impact on its ability to make long term forest sustainability assessments and protect non-timber forest values. The collection and maintenance of non-timber information is one of the major operational responsibilities OMNR still has on the Forest and the protection of those values continues to be of vital interest to the public. It is directly or indirectly the basis for most controversies related to forest management. In our view, OMNR should recognize this fact, and provide increased priority to meetings its obligations with respect to the collection and maintenance of values information. This is the second independent audit that has identified the same issue.

Recommendation #6:

The Chapleau District should evaluate and report to Corporate OMNR on the current status of its values database and its effectiveness in meeting OMNR CFSA obligations for forest management. On the basis of the report findings and recommendations, Corporate OMNR should establish and deliver a five-year funding commitment for values collection and maintenance in the Chapleau District.

Compliance with respect to AOC's was good. Five minor trespasses into AOCs occurred during the audit period. These sites were voluntarily rehabilitated and no penalties were levied (see Tables 6 and 7).

3.4.2. Harvest

We inspected eleven percent of the area harvested during the audit period. During the 2001FMP term, the vast majority of the area harvested was cut under the conventional clearcut silvicultural system. A small area (54 ha) was harvested utilizing the shelterwood system. On the basis of our site inspections, we believe that harvest operations were properly implemented and reflected operator care with regard to site damage and damage to residual trees. This observation is supported by the low number (7) of not-in-compliance harvest reports during the audit period relative to the total number of inspections (386 on the PMF for the 2002-2006 and 53 on the PF during 2006-2007).

All harvest sites inspected during the audit were approved for operations in the AWS and harvest prescriptions were implemented in accordance with the Silvicultural Ground Rules (SGRs), Silvicultural Treatment Packages (STP) and Forest Operation Prescription (FOP). Harvest prescriptions were appropriate for the site conditions observed.

Prior to 2006-2007 Domtar contractors utilized the even-age clearcut system using primarily full tree harvesting[6]. Starting in 2007 a cut-to-length system was implemented in an effort to reduce delivered wood costs. The cut-to-length system provides operational efficiencies such as reduced road construction and reductions in equipment (i.e. slashers on operations). It also offers environmental benefits such as a reduction in site nutrient losses through the retention of slash on cutovers and a reduction of productive forest land lost to slash piles (no longer required). However, diligence is needed to ensure that these benefits are not offset by lower regeneration success. We believe that the following conditions must be met to ensure the effective delivery of the renewal program under the cut-to-length harvest system:

- Site specific assessments and field monitoring must be undertaken to enable a best match between site preparation equipment and slash loads.
- A broader suite of site preparation equipment (e.g. barrels and chains) than has been used in past[7] will be required.
- Tree planting operations will need to be carefully monitored to ensure that all available plantable spots are utilized.

This topic is discussed in Sections 3.4.3. and 3.4.4.

A significant forest management trend on the PMF and the PF is the underachievement in planned harvest levels. Conifer harvest levels were 77% of the levels forecast in the 2001-2006 FMP. Hardwood forest unit harvest levels were 86% of the forecast levels. This underachievement is attributed to;

- labour disruptions,
- less area of jack pine than forecast area being suitable for commercial thinning,
- mill closures and/or shift reductions,
- poor markets for hardwoods,
- higher than anticipated levels of bypass associated with low volume stands or poor quality timber,
- high delivered wood costs,
- delays and deferrals due to the IEA request.

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[6] The full tree harvesting method involves moving the harvested tree to a roadside landing where it is cut (slashed) to the required length. The cut-to-length system involves cutting the tree to the required length at the location where it is harvested and leaving the "slash" at that location.
[7] Approximately 90 % of the site preparation of the Forest is by hydraulic trenchers.

Although harvest levels were less than planned, there was a close correlation between planned and actual harvest volumes for the area that was harvested. This is indicative of a good correlation between the growth and yield data used for planning and what was actually achieved during harvest.

3.4.3. Renewal

The audit sampled approximately 31% of the renewal activities (artificial and natural) conducted on the Forest. We inspected conifer corridor plantings within mixedwood forest units and planting within traditional clearcuts (Photographs 1 and 2). All activities observed in the field were approved in the FMP and complied with the applicable silviculture ground rules. Renewal activities were consistent with the Forest Operation Prescriptions (FOPs) and were appropriate to the specific site conditions.

For the FMP term the area renewed was generally in balance with the area harvested. Overall, artificial and natural regeneration achieved 79% of the FMP forecast area (31,860 ha planned vs. 25,251 ha treated for renewal). Over the last three planning terms (fifteen years), the total area renewed achieved an acceptable level (88%) relative to the area harvested.

On the basis of our field observations and document review, we conclude that a successful renewal program is being implemented.

Natural Regeneration

During the five year term of the 2001FMP, 63% of planned natural regeneration levels were achieved (18,111 planned vs. 11,338 renewed). The underachievement in natural regeneration was reflective of:

- Lower than planned harvest levels resulting in less area than planned being regenerated.
- Some sites designated for natural regeneration were, upon site inspection, deemed better suited for artificial regeneration. These sites were subsequently treated using artificial renewal techniques (i.e. planting, seeding).

All sites inspected for natural regeneration during the audit were well stocked and vigorously growing.

Artificial Renewal

The actual area of artificial renewal slightly exceeded planned levels for the 2001 PMF FMP (13,914 hectares renewed vs. 13,749 hectares planned). The higher than anticipated levels of artificial renewal are attributed to more area being available for planting because some sites were unsuitable for natural regeneration.

Planned seeding levels were not met in the 2001 FMP term due to a lack of suitable sites for the treatment (e.g. many sites were too dry or had the potential for significant competition which would negatively affect seed germination and growth).

Site inspections confirmed that Domtar is achieving good survival rates on most sites (Photographs 1 and 2).

Photograph 1. Successful artificial renewal of a jack pine cutover.

Photograph 2. Successful corridor planting of white pine in a mixed wood forest unit.

There were 77 inspections related to renewal activities conducted on the PMF between 2002 and 2006. No instances of non compliance were documented (Tables 6 and 7).

Results of Free to Grow Surveys

For the 2001-2006 FMP term Domtar inspected 66% of the area planned for free-to-grow surveys[8] (28,158 ha of 42,766 ha).Seventy-eight percent (21,963 ha) of the area inspected was declared free-to-grow (FTG).

We note that 47,105 ha of land are classified as "depleted" in the forest inventory. This area is comprised of harvested or naturally disturbed stands that do not have a FRI description (since they have not been surveyed for their free-to-grow status), and the forecasted depletion from the Pineland portion of the 2001 PMF FMP for a three year period (2003-2006). The amount of area residing in the depleted classification is significant, and is a concern considering the projected wood supply shortage. We believe that Domtar should accelerate its free-to-grow survey program to determine the status of this area for incorporation into the forest inventory for the preparation of the next forest management plan and provide a recommendation to address this concern.

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[8] Free to grow surveys assess whether regenerating stands reach the stage of being essentially free from competing vegetation; when the stands are assessed as free-to-grow they are added to the forest inventory.

Recommendation #7:

Domtar should accelerate its free-to-grow survey program for depleted lands to determine the status of the backlog areas for the development of the 2011 FMP.

A review of the Annual Reports indicated that approximately 68% of the area declared as free-to-grow (14,549 ha) had regenerated to the projected forest unit. Approximately 30% of the free-to-grow area (6,573 ha) is not reverting to the prescribed forest units. The trend is most prevalent in jack pine, poplar and mixedwood forest units that are trending towards jack pine or spruce/fir forest units. This is the result of poplar being eliminated on coarser dry soils and balsam fir becoming more prevalent on other sites. The Plan Author attributes the age at which FTG surveys are completed and "*a lack of a comprehensive review of historic results on the Pineland Forest during FMP development*" as contributing factors to the discrepancy between species that are expected to be regenerated (projected succession forecasts) and the species actually regenerated. We were initially concerned with the long term sustainability issues that could arise as a consequence of this trend and investigated how Domtar and the OMNR had addressed our concern in the planning process. For the development of 2006 FMP the rates of post-renewal succession of one forest unit to another was determined using;

- results from RPFO summaries,
- GIS FTG layer data,
- the experience of forest managers at the OMNR and Domtar.

The planning team used this information to revise/update succession forecasts for forest units in the FMP. The approach adopted is appropriate for forest succession planning and modeling and was well substantiated in the SFMM.

Given the observed trends and the time periods required for free-to-grow reporting, we believe this information should continue to be re-compiled for each successive plan and utilized in the SFMM model.

Suggestion #3:

Domtar should conduct a thorough review of the post renewal forest succession assumptions during the development of subsequent Forest Management Plans.

Site Preparation

We inspected twenty percent of the area that had been site prepared. All activities observed in the field were approved in the FMP and complied with applicable SGRs. We did not observe any evidence of environmental damage arising from site preparation activities.

Much of the area treated had been mechanically site prepared by TTS hydraulic disk trenchers due to the competitive nature of sites[9]. In 2005-2006 the actual site preparation was 12% of the planned level. This low level of achievement is attributed to the fact that actual harvesting was well below planned levels and SIP treatments were not required on all harvest areas.

As discussed in Section 3.4.2., the transition to the cut-to-length harvest system results in slash and debris being left on cutovers and this could inhibit the effectiveness of site preparation treatments (Photograph 3). In our view the continued success of the site preparation program will require;

- careful field assessments of remaining slash,
- the use of appropriate mechanical site preparation equipment,
- careful consideration of treatment timing (i.e. "curing of slash"),
- routine effectiveness monitoring.

Domtar staff indicated that they are well aware of these requirements and will monitor the effectiveness of site preparation activities to ensure forest renewal.

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[9] During the five year term of the FMP 12,425 hectares were mechanically site prepared (90% of the planned area).

Photograph 3. Slash can reduce the area of mineral soil exposure during site preparation.

Slash Piles

There was an active slash pile burning program during the audit period. Slash pile burn plans were prepared as required and public notification requirements were fully met. Our field site inspections revealed that piles were effectively burned where the treatment was implemented; however, due to poor weather conditions and treatment costs a small backlog of piles requiring burning still exists. We were informed these piles will not be re-scheduled for treatment as there will be no slash piles or burning associated with the move to the cut-to-length harvest system. Not burning the remaining slash piles will result in some reduction in the land area available for timber production; however, the fact that slash is piled rather than spread along landings has reduced the lost area. We do not consider the number of piles, or the potential loss of area to be significant enough to be a risk to forest sustainability. The costs associated with a "clean-up" in the absence of a formal burn program would be prohibitive. No recommendation is therefore provided.

Photograph 5. Roadside slash piles.

3.4.4. Tending and Protection

The Pineland Forest contains many areas with rich silt and loam soils which promote the development of mixedwood forests through natural succession. These sites tend to develop heavy competition from hardwood species following disturbance. Reductions in growth, yield, stand densities and time lags in reaching free-to-grow status due to competition could have a significant impact on long-term industrial wood supply. Extra effort and cost is often required to establish and maintain a conifer component similar to the pre-cut condition (Photograph 6). On the basis of our site inspections, our conclusion is that most conifer renewal sites will require at least one tending application (release treatment) to ensure successful renewal to conifer or conifer dominated forest units.

Photograph 6. Spruce seedling in raspberry competition after a single chemical tending treatment (note killed hardwood completion in background).

As previously noted, a conifer wood supply shortage is anticipated for the Forest in 30-40 years. One opportunity to dampen the impact of that anticipated shortage is to maximize the growth potential on areas that have been artificially renewed to conifer species. Studies have demonstrated that manual and mechanical tending have high labour costs, and lower productivity ratios than aerial herbicide treatments. Since many of the key competitor species re-sprout vigorously from stems, underground rhizomes, and/or root stocks, the use of manual and/or mechanical control methods can often exacerbate competition problems and require repeat applications. In our view, the on-going use of chemical herbicide treatments is an essential component of the strategy to address the looming wood supply shortage.

We inspected 11% of the tending activities conducted during the audit period. All activities were approved in the FMP and complied with the applicable Silviculture Ground Rules (SGRs). Tending activities were consistent with the Forest Operation Prescriptions (FOPs). We note that the cut-to-length harvest system could pose some challenges with respect to the delivery of the tending program if slash inhibits chemical contact with target species. As well, if when slash is left to "cure"[10] for a season (to facilitate its break-up during site preparation) undesirable species could get a competitive head start. Domtar staff indicated that they are well aware of the challenges related to on-site slash and that sites would be monitored to ensure the effective delivery of the tending program and renewal success.

The tending program was, for the most part, effectively delivered through aerial (helicopter) and ground application (back-pack sprayers) of herbicides (Photograph 7). Our site inspections indicted that the treatments were warranted and the areas inspected had benefited from the treatment.

Photograph 7. Area treated by application of aerial herbicide.

We did note however, that most of the areas treated during 2005 did not achieve effective control of the competing vegetation. Reasons for the treatment failure are currently being investigated by Domtar. While we recognize that treatment failures can and do occur from time to time in the delivery of silvicultural programs, we are concerned that the problem with the 2005 spray program was not discovered prior to the audit. Diligent monitoring is required to ensure that site competition is assessed in an appropriate timeframe. Where required, treatments should be implemented in a timely manner to ensure that the investment in regeneration is not lost. This is especially critical on the Pineland Forest given the impending wood supply shortage. We also visited several sites where an additional tending intervention was warranted. We believe that this issue is indicative of a need for Domtar to improve its field monitoring program and we provide the following recommendation to address this concern:

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[10] Curing natural compaction and breakdown of slash on site snow loads and by natural processes such as decay

Recommendation #8:

Domtar must ensure that its silvicultural effectiveness monitoring program is a priority activity on the Forest with adequate staff and time allocated for effective program delivery.

During 2006, Domtar was unable to conduct its herbicide program due to an Individual Environmental Assessment request regarding herbicide use on the Forest. The delay in treating sites as a result of the IEA request process coupled with the 2005 herbicide treatment failure(s) has resulted in a backlog of areas requiring treatment. The competitive nature of most of the artificially renewed sites on this Forest indicates that any additional delay in treating this backlog area could result in the loss of investment in regeneration through seedling mortality, losses in growth, and/or the extension of the time period required for renewed areas to reach free-to-grow status.

Pre-commercial thinning

A shortfall in actual area treated by pre-commercial thinning[11] (PCT) occurred during the 5 year term of the PMF FMP (35% of planned (280 hectares)), with no treatments being undertaken in 2005-2006. The shortfall in area treated is attributed to the fact that the majority of planned sites were not conducive to the treatment due to unfavorable species compositions, and higher stand ages with larger than anticipated crop tree diameters.

During the audit we visited two sites were PCT work had been undertaken. On one site, we questioned the requirement for the treatment because of low densities of crop species (jack pine) and observed that much of the thinning effort had been directed at reducing competing vegetation as opposed to reducing crop tree density. A record review indicated that the inspected block had not been audited for quality control during the work although other blocks in the proximity had been. PCT work at the second site reduced crop tree densities to appropriate levels and was more representative of an appropriate candidate site for treatment. Recommendation # 8 addresses the requirement for Domtar to increase its monitoring of silvicultural projects on the Forest.

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[11] Pre-commercial thinning is a forest management activity where trees are removed from a stand to reduce the number of trees to an acceptable density.

No instances of "not-in-compliance" were reported for tending activities during the audit term.

3.4.5. Renewal Support

Renewal support activities included tree seed collection, planting stock production and tree improvement operations. During the audit period cone collection activities were slightly below planned levels but sufficient to support the renewal program. Domtar participates in tree improvement operations through its membership the Northeast Seed Management Association (NESMA). Activities undertaken by NESMA during the audit period included fertilization, irrigation, insect and competition control, seed collection, seedling procurement and seed orchard development. For the audit period, Domtar had sufficient funds in the Silvicultural Trust Account to support the silviculture program.

We conclude that Domtar has an effective renewal support program.

3.4.6. Access

Road construction, water crossings, road maintenance and any other access activities must be conducted in accordance with the FMP, AWS and current applicable laws and regulations.

In the course of the conducting the audit, we traveled hundreds of kilometers on primary and secondary roads throughout the Forest. Our assessment is that the roads were well constructed and maintained in accordance with the FMP, applicable guides and good management practices. We examined twelve bridges and culverts and found them all to be well constructed to the appropriate guidelines. Proper grading techniques were in evidence and we saw no evidence of roadside berms or washouts on maintained roads.

There were 200 Forest Operation Inspection Reports (FOIR) on the Pineland-Martel Forest related to access between 2002-2006.with four not in compliance reports issued on the Pineland portion of the Forest. In 2006-2007 there were four inspections with no non-compliances reported (Tables 6 and 7).

In 2006, the Ontario Government established a fund to support the construction and maintenance for primary and secondary forest access roads that provide general access for the public. A requirement of the IFAPP is that auditors inspect a minimum 10% sample of roads work funded under this arrangement. Domtar carried out capital improvements and maintenance on nine roads (263 km) in 2006 – 2007 and invoiced OMNR $1,202,192 under the program. We confirmed that work was undertaken as invoiced.

The enforcement and maintenance of access control was an issue during the audit period. Several areas are posted under the Public Lands Act to restrict motorized vehicle traffic mostly as a result of directions in the twenty-year old Chapleau District Fisheries Management Plan (DFMP) (which was developed to maintain quality fisheries zones in the District) or to prevent road-based public access to identified tourism lakes. While access control signs have been generally respected by the public, some trespass problems exist and OMNR currently has limited capability to enforce the restrictions. This circumstance is exemplified by an issue which arose during the audit period with respect to the maintenance and enforcement of gates constructed on the Rollo and Swazye Roads to protect a "Quality Fisheries Zone" identified in the DFMP. At these sites, Domtar and OMNR entered into an arrangement where Domtar committed to maintain locks on the gates and OMNR committed to ensure enforcement of the access restriction. During the audit period, the gate locks were continually vandalized (at the time of the field audit 10 locks had been replaced in 2007) and Domtar adopted a position that it would no longer provide locks for the gates. Domtar was of the view that the continued locking of the gates was ineffective and expensive particularly if OMNR is not capable or willing to meet its enforcement obligations. OMNR informed us that the Domtar position was unacceptable. We determined that OMNR enforcement priorities resulted in low priority for the enforcement of access. Recommendation # 9 addresses this concern.

In our experience, the placement, maintenance, and enforcement of access restrictions is costly, and ineffective if people are determined to access an area. This is particularly true in situations where there is a low expectation of being caught and prosecuted and fines for the infraction are low. Gates are expensive to construct and maintain and must be signed in order for access controls to be enforceable. From an enforcement perspective a stand-alone sign is as enforceable as a sign and gate. With respect to access control, it is our view, that the following tasks should be considered;

- The Fisheries Plan should be revisited to determine if restrictions are still required or should be revised.
- In instances where access restrictions are required the locations and methodology for restricting access (gate and sign, or sign only) should be reviewed.
- OMNR should investigate a full range of enforcement options for access control and provide adequate funding to support the selected options(s).

Recommendation # 9 is intended to address our concern.

Recommendation #9:

The OMNR Regional and District staff should review the need, location and types of controls required for access restrictions, investigate the full range of enforcement options and adequately fund whatever option it decides to pursue.

3.5. Systems Support

3.5.1. Human Resources

As described in Section 3.1, the 2007 IFAPP allows the auditor to utilize evidence from a recent forest certification audit where the evidence collected was current and sufficient to satisfy the requirements of the IFAPP. The Pineland Forest is FSC certified and in our opinion the IFAPP human resource requirements were met.

We found that the Chapleau OMNR had utilized a range of training methods and relevant courses and materials to ensure employees were fully aware of their responsibilities and were capable of carrying them out however, in addition to acquiring knowledge from formal training, local OMNR staff are supposed to be OMNR's "eyes and ears" on the ground. The long term combination of staff shortages, staff changes and chronic funding shortages has continued to result in an inadequate OMNR presence on the Forest and a minimalist effort in values data collection and in meeting its compliance obligations.

The 2002 IFA recommended that OMNR staff be provided with "*field time targets*" to ensure that adequate time was spent in the field. Interviews with Domtar, OMNR and the LCC and our review of the 2002 IFA Status Report indicate that established field time targets have not been met and local staff continue to have a limited field presence. For example, the IFA Status Report indicates that the forest technician met 60% of the 2005-2006 "*field time target*" and the Forester was in the field for 50% of the targeted six day time period (e.g. 5.5 days in 2003-04, 3 days in 2004-05 and 3.5 days in 2005-06). Recommendation # 10 is provided to address this and other staffing issues.

As illustrated in Tables 4 and 5[12], a serious problem associated with staff vacancies and/or turnovers exists. In our opinion, staff turnovers amounting to four different supervisors, five biologists, two foresters and eleven technicians during a five-year period cannot provide the staff presence required to obtain field knowledge and deliver on OMNR's obligations. We are aware that some of these individuals may be rotating to positions within the District, however, the experience and skills required in one position are not immediately or easily transferred to the other. Additionally, turnover in key leadership positions such as the District Manager and Planning and Information Supervisor may also contribute significantly to issues related to the lack of corporate memory and/or local knowledge on the Forest.

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[12] Although the dates utilized for table construction extend beyond the audit scope, we are of the opinion that the tables are useful in illustrating the serious staffing problem afflicting the Chapleau District.

TABLE 4. OMNR CHAPLEAU DISTRICT- NUMBER OF INDIVIDUALS OCCUPYING POSITIONS WITH DISTRICT WIDE RESPONSIBILITIES (APRIL, 2002 – SEPTEMBER 2007)

Position	Number of Individuals
District Manager	3
Planning and Information Supervisor	2
Integrated Management Biologist	2
Integrated Management Forester	2
Forestry Technical Specialist	1
Lands and waters Technical Specialist	1
Fish and Wildlife Technical Specialist	4

TABLE 5. OMNR CHAPLEAU DISTRICT,-AREA EAST* - NUMBER OF INDIVIDUALS OCCUPYING POSITIONS (APRIL 2002 – SEPTEMBER 2007).

Position	Number of Individuals
Area Supervisor	4
Biologist	5
Forester	2
Resource Technician	11 individuals in 4 positions

* The Area East portion of the District has responsibilities for the Pineland Forest.

The staffing problems were compounded by delays (up to one year) in recruiting to fill vacant positions. In our view, an OMNR District with low staff turnover can work around vacant positions for some time; however, a District like Chapleau, with steady turnover can end up carrying an unacceptably high number of vacancies (up to one third of all staff).

OMNR's mandate and the SFL model of forest management obligate OMNR to perform a range of functions including a compliance and audit function, collection and maintenance of non-timber values information. These obligations are intended to provide an assurance to the public that Crown forests and resources are being managed in a sustainable manner. Local staff are expected to have timely and relevant local field knowledge. Lacking that, the purpose of local offices becomes questionable. We were informed by OMNR staff that their field presence was limited by staff availability and a lack of funding to put gas in vehicles.

While we were impressed with the dedication and work ethic of all the OMNR staff we met, the performance of the Chapleau OMNR "team" clearly suffers from staff shortages, staff turnover and funding shortages. These are long standing and well known issues within OMNR. Discussions with the LCC and Domtar and our own investigations lead us to question the District's ability to "walk the talk" and by extension, OMNR's commitment to deliver on its field obligations. We provide the following recommendation to both Corporate OMNR and the Chapleau District to address this concern.

Recommendation #10:

Corporate and local OMNR should conduct a detailed review of Chapleau District staffing, workload and funding issues to determine why staff has limited field presence on Forest and implement corrective actions.

3.5.2. Documentation and Quality Control

The information management and maintenance systems of the SFL holder and the OMNR must be complete, effective and current.

Domtar's documents and record control processes met all IFAPP requirements. We interviewed individuals who had clearly assigned responsibilities for the collection, control, distribution and updating of documents. Documents were stored in several central locations in the Timmins Office and readily available. An annual document review system was in place to remove and replace obsolete documents.

OMNR also had adequate filing and document control processes. Maps and documents were kept current and there was a system to ensure maintenance and distribution. During the audit we encountered a problem locating the 2002 LCC minutes, however, we attribute the problem to staff turnover rather than a larger documentation control problem.

3.6. Monitoring

3.6.1. General Monitoring

SFL holders are required to develop and implement a monitoring program which reports on forest management activities and evaluates the success of these activities in achieving management objectives. Specifically, the forest manager must:

- monitor the measurable indicators of forest sustainability,
- develop a monitoring program to determine the effectiveness of silvicultural treatments,
- develop, and implement a forest specific compliance plan to ensure compliance with all applicable legislation, regulations, the FMP and all manuals and guidelines,
- prepare reports required by the FMPM (i.e. Annual Reports, Report of Past Operations, Year Ten Annual Report).

The 2002 IFA produced a recommendation requiring the Chapleau OMNR to produce Annual Compliance Operation Plans (ACOP). ACOPs were produced from 2003 through to 2007, however, the "Summary of Activities" section of the plans was only fully completed in 2004-2005 and 2006-2007. Staff were aware of the issue and the requirement to fully complete the forms. Additionally, planning for the enforcement of access restrictions was weak as it lacked a clear commitment to directed enforcement action (See Section 3.4.6). Domtar produced Five-Year Compliance Strategies (Plans) for both the 2001-2006 and the 2006-2011 planning periods. These were complete and consistent with the Guidelines for Forest Industry Compliance Planning. The AWS's included properly completed Annual Plans of Action. Compliance inspection activity was clearly specified, and in our view, was adequate to minimize the number of infractions. This was reflected in the good compliance record for this Forest (see Tables 6 and 7).

While Domtar was primarily responsible for the compliance program, it shared responsibility for delivery with its contractors. All inspections were completed by Certified Compliance Inspectors. As required, OMNR and Domtar had completed joint compliance inspections to ensure consistent assessment of forest activities, and regular meetings were held with Domtar to discuss compliance priorities and issues

Tables 6 & 7 summarize the compliance activity on the Forest during the audit period. Eleven of the twenty-four reported NIC incidents occurred on the Pineland Forest or the Pineland portion of the Pineland-Martel Forest between 2002 and 2006. The tables indicate a trend towards improved compliance over the audit period, and what appears to be a more consistent assessment of activities by OMNR, Domtar and contractor inspectors.

Table 6. Industry Compliance Inspections, Pineland-Martel Forest 2002-2006 and Pineland Forest 2006-2007

Activity/Year	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Access	37 (1)	54	42	23	4
Harvest	85 (2)	78 (4)	54 (1)	97 (1)	43 (1)
Renewal	27	26	9	9	2
Maintenance	4	0	3	8	0
Protection	0	0	*	*	*
Total:	153 (3)	158 (4)	108 (1)	137 (1)	49 (1)
% NIC:	3	3	<1	<1	2

Source – 2002-2004 are from FOCIS and 2004-2007 are from FOIP
* Under FOIP Protection is no longer reported
** ( ) designates Not In Compliance

TABLE 7. OMNR COMPLIANCE INSPECTIONS, PINELAND-MARTEL FOREST 2002-2006 AND PINELAND FOREST 2006-2007

Activity/Year	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Access	11 (1)	13 (4)	14 (2)	6	0
Harvest	12 (1)	25 (4)	22 (1)	22 (1)	10
Renewal	0	0	5	1	0
Maintenance	0	0	0	0	0
Protection*	0	0	*	*	*
Total:	23 (2)	38 (8)	41 (3)	29 (1)	10
% NIC:	9	21	7	3	0

Source – 2002-2004 are from FOCIS and 2004-2007 are from FOIP
* Under FOIP there are only four main activities
** ( ) designates Not In Compliance

While NIC reporting requirements were fully met, OMNR and Domtar failed to comply with FIM timelines in instances where there was full compliance. Reasons for late reporting included; funding and staff shortfalls and a lesser priority being assigned to reporting on full compliance.

Recommendation # 11:

Domtar and OMNR should comply with FIM reporting requirements for FOIP's.

Domtar was also often late submitting work start-up reports to the OMNR. The late filing of these reports made it difficult for OMNR compliance staff to plan their activities and created a situation where field operations could be completed before a start-report was received.

Recommendation #12:

Chapleau OMNR and Domtar must implement the start-up notification requirements of the approved 5 Year Compliance Plan and adhere to the requirements of the Compliance Manual.

Domtar conducts field surveys (aerial and ground) to monitor and track regeneration success, vegetative competition, free-to grow status, the effectiveness of herbicide release treatments and the status of roads and water crossings etc. All renewal areas are visually assessed for establishment success according to guidelines provided in the SGRs. A monitoring program was implemented during the audit period for an exception to the Osprey Guideline as required.

In general, an acceptable monitoring program is being implemented by Domtar, its contractors and the OMNR. We do note however, that problems with respect to the effectiveness of the 2005 herbicide tending program were discovered late and we also visited several sites where additional tending interventions were warranted. We believe that these findings highlight a need for Domtar to improve its field monitoring program and provide a recommendation in Section 3.4.4. to address this concern.

3.6.2. Annual Report

An Annual Report (AR) summarizes the forest management operations carried out during the preceding year (April 1st–March 31st). The purpose of the AR is to document the annual implementation of forest management operations, and to monitor the progress towards achieving targets identified in the FMP. The text provides explanations for significant differences between the level of activity scheduled in the AWS and the level of activity that actually occurred. The text also discusses emerging trends or issues. The Plan Author is responsible for the preparation of the AR and OMNR has responsibility for specific components of the document.

We reviewed the Annual Reports for the each year of the audit period with the exception of the 2006-2007 AR which is not required until November of 2007. The content of the ARs met reporting standards set out in the FMPM(s), the FIM and the Annual Report Preparation and Review Protocol, with the general exception of compliance text. Explanations of any significant differences between the level of activity scheduled in the AWS and the level of activity that actually occurred were provided. Comparisons were provided for actual and planned activity levels in the FMP(s). Our review indicated that the information related to forest management activities was accurate, with the exception of a few minor editing errors.

Domtar submitted all reports on time, but in some instances OMNR was unable to meet review deadlines largely due to staff turnover[13]. OMNR adherence to deadlines did improve over the audit period, and we were satisfied this issue has been satisfactorily resolved.

The forest inspection section of the 2002-2003 and 2003-2004 ARs did not fully meet requirements. The text consisted of a reiteration of the data in the AR tables and provided no discussion of the reasons for occurrences or the plans to ensure they would not happen in the future. In later ARs the quality of text improved.

We also noted a discrepancy in reporting (Tables AR 12 and AR 13) which resulted from the late input of reports into the system and consequently the accuracy of reporting when tables are linked. We provide a recommendation in Section 3.6.1. to address this concern.

3.6.3. Report of Past Forest Operations

We reviewed the 1997-2001 Report of Forest Operations (RPFO) for the Pineland and Martel Forests, and the Year 5 Annual Report for the Pineland-Martel Forest (which represents the Year-10 Annual Report for the 2001-2021 Pineland-Martel Forest Management Plan).

The 1997-2001 report was a four year RPFO prepared for the Pineland and Martel Forests as a result of the 1998 Ontario Judicial Court Review. The Year 5 Annual Report was prepared in accordance with the Phase-in Provisions of the 2004 FMPM (to the extent possible) and the FIM. The report was prepared by Domtar, with Tembec Industries providing information on the Martel Forest. It was consistent with the information reported in the Comparison and Trends Analysis of Planned vs. Actual Forest Operations Report. It contained a section which provided conclusions on objective achievement and listed fifteen of the recommendations of the 2002 IFA which were specific to the Pineland Forest. With respect to the achievement of objectives it concluded that *"planned objectives for both forests have been achieved or the intent of these objectives has been achieved."* An appendix to the 2006 FMP, details how IFA recommendations specific to forest management planning contained in the RPFO were addressed.

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[13] For example, the 2002-2003 and the 2003-2004 spring reports and the 2003-2004 fall report were all signed by the reviewing forester on July 22nd, 2004 and the District Manager approved them all on August 19th, 2004.

A comprehensive evaluation of operations and an assessment of the achievement of management objectives are provided in the Year 5 AR. Each objective has been achieved to some degree as a result of the implementation of the forest management program. It is our opinion that the explanations for identified shortfalls in the achievement of planned targets were reasonable.

All additional reporting requirements required by the 2004 FMPM for Year 10 Annual Reports were met[14]. The Analysis of Forest Disturbances summarized the frequency distribution of forest disturbances by size class at the start and end of the plan period and indicated progress towards the template distribution. The review of renewal and tending activities reported on the level of activities, expenditures incurred, the effectiveness of the programs and harvest and renewal trends. No recommendations for changes to the existing renewal and tending program were made, as despite lower than anticipated levels of harvest the renewal and tending programs (with the exception of aerial seeding) significantly achieved FMP targets.

The report also provided a summary of the Action Plan activities in addressing the recommendations of the 2002 IFA; a review of modelling assumptions; assessment of objective achievement; an assessment of forest sustainability and conclusions and recommendations to assist in addressing issues encountered during the implementation of the 2006 FMP. Recommendations were related to:

- Reducing the area of bypass on the Forest.
- Requesting Forest Futures Trust Funding for eligible silvicultural projects.
- On-going compliance monitoring.
- Enforcement of access control measures.

To varying degrees these recommendations have been implemented and/or addressed during the first year of the implementation of the 2006 FMP.

The assessment of forest sustainability was limited as a result of changes to the planning landbase and a lack of data consistency between plan terms. However, the Report Author concluded that forest management operations carried out contributed to the long term sustainability of the forest. Section 3.7 provides a discussion and our assessment of objectives achievement and forest sustainability.

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[14] Additional reporting requirements include: Analysis of Forest Disturbances, Review of Renewal and Tending Activities, Review of Forest Modeling Assumptions, Independent Forest Audit Action Plans, an Assessment of Objective Achievement and a Determination of Sustainability.

3.7. Achievement of Management Objectives and Forest Sustainability

This component of the audit examines whether management objectives have been achieved and assesses audit findings in the context of forest sustainability. The assessment of sustainability is based on data prepared by Domtar, our analysis of that data and our field observations. A significant amount of data is provided by Domtar in; *The Comparison and Trends Analysis Report of Planned vs. Actual Forest Operations Report* (the Trend Report), Annual Reports, and the RPFO. The Trends Report requires the forest manager to determine and assess reasons for emerging trends in forest statistics. The RPFO serves as a background document which summarizes operations that occurred on the forest prior to the plan term.

Achievement of Management Objectives

The primary goal of the 2001 FMP was to maintain a healthy, sustainable forest ecosystem which would provide economic, social and environmental benefits to the people of Ontario. The objectives in the 2001 FMP were well defined and in many instances quantifiable targets related to objective achievement were developed. Table 8 provides a summary of the objectives and targets and our comments with respect to achievement of those objectives.

TABLE 8. SUMMARY OF THE STATUS OF THE 2001 PINELAND-MARTEL FOREST FMP OBJECTIVES

Objectives	Target(s)	Comments
Forest Diversity Objectives		
To approach the relative proportion of forest cover types that would naturally occur on the Pineland-Martel Forest.	To maintain the current forest cover types as defined by the Standard Forest Units within +/- 20% of the natural bounds of variation as defined by the Natural Benchmark SFMM run.	The objective was addressed mainly through the analysis of the different management alternatives in the SFMM. Our assessment is that the objective was met as the area forecast for harvest was within 1% of the AHA for most Forest Units and the planned harvest area did not exceed the AHA.
	To maintain a minimum of 100 % of the current area of the white pine shelterwood (PW1), white pine seed tree (PW2) and tolerant hardwood (OH1) forest units on the landscape.	This target cannot be measured due to the change in the planning land base between the 2001 PMF FMP and 2006 PF FMP.

To provide a level and type of disturbance that moves towards resembling that which would occur naturally on the forest.	Landscape Target: Create the following range of disturbance sizes over the 1986-2006 period to simulate as best as is operationally possible a natural disturbance pattern. Landscape Target: Maintain at a minimum one internal residual patch per one hundred hectares of new harvest area for the 2001 to 2006 period. Stand level targets: Maintain a minimum of 60 dead or declining trees per 10 ha. Maintain a minimum of 100 downed logs per 10 ha.	The frequency distribution on the landscape at the end of the 2001-2006 planning term moved toward the natural disturbance template in all but three size classes. Targets related to residual patches and number of dead, declining trees or downed logs per hectare was met.
To increase the conifer component of the forest to more closely reflect the historic forest condition.	To increase the level of jack pine growing stock on the forest to 21 % within 100 years. To maintain the level of white and black spruce growing stock on the forest at 30 % or greater over the next 100 years.	Artificial renewal achieved 101% of forecast targets during the plan term. While direct comparisons of area treated are not possible due to changes in reporting specifications it can be inferred that the objective was met.
To increase the white and red pine component of the forest to more closely reflect the historic forest condition.	To increase the level of white and red pine growing stock on the forest to 2 % within 100 years.	A total of 251,000 white and red pine seedlings were planted during the plan term which represented ~200% of the plan forecast level. Harvest levels in the Pw1 and Pw2 forest units were also below levels forecast. On this basis we conclude that progress is being made in the achievement of this objective.
To maintain a portion of the forest that exhibits old forest characteristics.	To maintain 15% of the Forest in a mature state. To maintain 3-5% of the Forest in an over-mature state as detailed in the following table.	Comparisons of targets are not possible due to the change in the planning land base.

To conserve the genetic diversity of tree species on the Pineland-Martel Forest.	To plan for natural regeneration on at least 40% of harvested areas.	This objective was exceeded as 45% of renewal was by natural regeneration for the FMP term.
Socio-Economic Objectives To provide a sustainable supply of timber products to meet the requirements of Domtar Inc. wood processing facilities.	Provide annually 421,239 m^3 of SPF timber.	This objective was met in the planning process. For the plan term the forecast harvest for SPF timber was 430,852 m^3 Actual wood utilization was 81% of the forecasted level. The utilization level for all conifers was 74% of the FMP forecast.
To provide a sustainable volume of hardwood timber products to meet the requirements of hardwood processing facilities with supply directives from the forest.	Provide annually 222,044 m^3 of poplar OSB. Provide annually 40,000 m^3 of birch OSB. Provide annually 27,200 m^3 of poplar veneer.	Actual poplar utilization levels were 64% of the FMP forecast level and birch utilization was 329% of the FMP forecast. Birch levels were significantly higher due to markets for OSB grade wood during the plan term. The utilization level for all hardwoods was 67% of the forecast level.
To provide opportunities for recreational and commercial land use activities on the forest.	To develop at least one Resource Stewardship Agreement during the course of this plan.	This target was not achieved. However the objective of providing opportunities for recreational and commercial land use activities on the Forest was achieved.
To provide opportunities for First Nation involvement in forest management activities.	To develop at least one agreement for First Nation involvement in forest management activities during the course of this plan.	This objective was achieved with the signing of an agreement between Domtar and the Mattagami First Nation.
To minimize the loss of timber values to fire and insect damage.	No significant loss of timber values due to fire or insects.	Several strategies were adopted to achieve this objective (i.e. preparation of annual fire plans, conduct of surveys for major insect infestations). The objective was met as there were no significant losses of timber values to fire or insects.
Provision of Forest Cover Objectives To maintain an acceptable level and quality of wildlife habitat.	To maintain a minimum of 10% of the forest, that has the capability to produce marten in suitable	This target was met by the deferral from harvest of 57,118 ha of marten core areas.

	conditions over the next 60 years. To maintain the area of wildlife habitat units within minus 20% of what would naturally occur on the forest.	The target was met by the maintenance of a minimum 20% of habitat units expected to occur in the natural forest.
To undertake all forest management operations using sound environmental practices such that any negative environmental impacts are minimized.	No significant negative environmental impacts as a result of forest management activities.	This objective was met as there were no significant negative environmental impacts reported in FOCIS or FOIP during the plan term.
Silviculture Objectives To enhance the value, growth and yield of forest stands on the Pineland-Martel Forest.	Perform 400 ha commercial thinning of jack pine per year.	This target was partially achieved. A total area of 1,216 ha of commercial thinning in jack pine was undertaken during the plan term (61% of the forecast area). The underachievement of the target is attributed to the fact that candidate sites did not meet operational requirements (i.e. minimum harvest volume criteria).
	Perform 250 ha spacing (pre-commercial thinning) per year.	This target was partially achieved with the completion of 280 ha of PCT during the plan term (33% of the forecast area). This underachievement was due to the fact that the majority of candidate sites were not conducive to PCT treatments.
	Establish 2,100 ha of intensive conifer plantations per year.	The target was achieved as 12,817 ha of plantations were established during the plan term (116% achievement of forecast level).
To improve the quality of low volume and/or degraded forest stands.	Perform improvement cuts on 150 ha annually.	This target was met with 740 ha being treated during the plan term (99% of the plan forecast level).

The 2006-2007 Annual Report will compile data and information with respect to the progress being made towards the achievement of the objectives and targets of the 2006 FMP. This document is not required until November 2007. During the field audit we observed successful implementation of silvicultural activities that occurred in 2006 and did not note any evidence of negative environmental impacts. The downturn in the forest products sector, labour disputes at area processing facilities, the temporary elimination of the herbicide program and a reduction in number of harvest blocks due the IEA request have resulted in achievement levels being lower than planned in the first year of the 2006 FMP.

Review of the RPFO Assessment of Sustainability

We examined the 10 Year Annual Report for the 2001-2021 FMP for the Pineland-Martel Forest for our assessment of forest sustainability. The report, to the extent possible, was prepared in accordance with the Phase-in Provisions of the 2004 FMPM. Five criteria are used at the management unit level to assess forest sustainability. These include biodiversity, forest condition and ecosystem productivity, multiple benefits to society, soil and water conservation, and accepting society's responsibility for sustainable development. Information required to fully assess sustainability based on these criteria was not available, or not in a comparable format in previous plans to enable a comprehensive assessment of sustainability criteria. However, text and tables were completed to the extent possible[15]. Until several consecutive FMPs have been prepared for a common land base, significant information gaps related to forest sustainability will continue to exist.

The RPFO Author concluded that "*From the assessment of the various criterion and indicators of sustainability it is difficult to conclude that the Pineland-Martel Forest is being/has been managed sustainably as the information required to do the assessment is either not available over multiple terms or is in formats not readily comparable amongst plan terms. However from the information that is available it can be concluded that the forest management operations carried out on the Pineland-Martel Forest have contributed to the sustainability of both the Pineland and Martel portions of the former PMF*".

Based on the RPFO information we concur with this assessment and we agree that forest management activities have contributed to the sustainability of the Forest. This conclusion is based on the following;

- For all landscape pattern indices, there has been no change in values between 2001 and 2006.
- The frequency distribution of disturbance patterns on the landscape has progressed toward the natural disturbance template in all but three size classes.
- The calculated Net Primary Productivity Value is unchanged from the previous plan term.

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[15] For example a direct comparison of the managed Crown forest area available for timber production between the 2001 and 2006 FMP's is not possible due to the change in the planning landbase between the two plan periods.

- The amount of area disturbed in second order watersheds declined from previous plan terms (18.6% during the 1997-2001 plan term to 7.0% in the 2001-2006 FMP term).
- Seventy-eight percent of the forecast Available Harvest Area (AHA) was utilized during the implementation of the 2001-2006 FMP.
- Total productive Crown forest for the Pineland portion of the former PMF has steadily increased from a low of 323,899 ha in 1987-1992 to a high of 329,244 ha in 2006-2011.
- The demographic profile from the 2001 FMP (1996 data) states that the population for the Chapleau District was 3,018 as compared to the 2006 FMP (2001 data), which was 3,032. This stability may be indicative that social and economic benefits to local people were being maintained. A portion of these benefits would be derived from forest management activities.
- OMNR wildlife and fisheries harvest quotas have remained relatively stable indicating populations are renewing themselves.
- The economic status of commercial tourism operations has remained unchanged suggesting customers are enjoying continuing hunting and fishing success.

In our opinion, the ongoing issue of information not being "*... available over multiple terms or ... in formats not readily comparable amongst plan terms*" is a major issue that, over time, threatens to erode the public's confidence in industry and OMNR's ability to manage forests sustainably. The RPFO Authors assessment that "*...it is difficult to conclude that the Pineland-Martel Forest is being/has been managed sustainably...*" is the inevitable result of constant changes to guidelines, standards, and changing FMP boundaries. Without a baseline, or the ability to track "trends through time" on a specific landbase the objective assessment of long-term sustainability becomes more difficult.

RPFO authors (and auditors) make their best assessment with the "*...information that is available...*" however, it is our view that this situation must change. We understand the pressures to utilize the latest scientific information in manuals and the economic and social pressures to respond to changing industry requirements. However it is important to balance the response to these pressures with the need to produce factual and defendable evidence that the forests are being managed sustainably.

Recommendation #13:

Corporate OMNR should fully consider the effect of on-going changes to boundaries and guidelines on its ability to measure the effectiveness of any particular initiative and report on their cumulative effect on forest sustainability.

Review of the Comparison and Trends Analysis of Planned vs. Actual Forest Operations Report

The Forest Manager is required to complete a "Comparison and Trends Analysis Report of Planned vs. Actual Forest Operations Report" as a requirement of the Independent Audit Process. The purpose of the report is to examine trends in planned vs. actual forest operations over time in order to provide an interpretation of the current state of the Forest relative to its historic state.

The report was prepared in accordance with the requirements of Appendix C of the IFAPP and appended in Appendix A. The report compared data from the 1992-1997 and 1997-2001 plan terms for the Pineland Forest, and as per OMNR direction included data from the 2001-2006 term of the Pineland-Martel FMP to assist in the assessment of trends. The following paragraphs describe the significant trends or emerging trends on the Forest.

The total forested Crown land area under management has declined since 1992 by approximately 10%. This reduction is attributed to improved accuracy in area measurement, the removal of three protected areas and the expansion of a Provincial Park.

There has been a significant decrease in the area reported as "B&S/NSR and a significant increase in the area reported as "Depleted".

During past plan terms forest unit descriptions were unique to the Pineland Forest. For the preparation of the 2006 FMP a standardized set of forest units (14) developed by the OMNR for all managed Crown land was utilized. This transition to standardized units made it difficult to track and compare forest unit transitions between planning terms. This circumstance was further complicated by area changes and the 1995 forest inventory which adjusted forest unit compositions, the area of stands and land classifications. It is evident that the proportion of pure jack pine and spruce forest units has changed. Pure jack pine forest units have increased by approximately 5% as a result of the management direction to increase the area associated with the forest unit. The reported decline in the area of the pure spruce forest unit is likely the result of inventory re-classification in the 1995 FRI (stands classified as pure spruce in the 1973 inventory were re-typed as other conifer or mixed conifer). The area of mixed hardwood forest has also declined by approximately 8% since 1992. This decline is attributed to the conversion of the forest unit to pure hardwood or conifer dominated plantations and the creation of the tolerant hardwood forest unit.

However, trends with respect to changes in forest cover can also be discerned by comparing the area of working groups between plan terms (Table 9). Differences between 1992 and 1997 are largely a reflection of the improved forest inventory, whereas differences between the 1997 and 2006 FMP terms are largely attributed to Ontario Living Legacy land removals, adjustments to the B&S/NSR and "Depleted" land classifications and harvest depletions.

TABLE 9. MANAGED CROWN PRODUCTION FOREST AREA BY WORKING GROUP 1992-2006

Working Group	1992 - 1997	1997 - 2001	2006 - 2011
White Pine	853	1,071	789
Jack Pine	30,384	39,331	36,593
Spruce	83,962	96,865	78,914
Balsam Fir	10,404	4,170	6,712
Yellow Birch	563	676	633
Cedar	14,360	26,503	21,964
Larch		2,949	2,803
Poplar	56,335	75,458	57,329
White Birch	59,276	48,482	49,943
Maple (Hard & Soft)	34	335	93
Ash	29	172	142
Total:	**256,200**	**296,012**	**255,915**

Actual harvest volumes were less than planned targets (96% for the 1992 term and 77% for the 1997 FMP term). The lower harvest levels were reflective of lower than anticipated hardwood demands, operational constraints and labour disruptions at a processing facility. The most significant harvest reductions occurred with respect to the poplar and white birch working groups due to bypass because of low volumes of poplar and/or birch in the stands or inoperable stands (e.g. difficult access or terrain). White birch targets in the 1997 plan anticipated a demand for veneer and sawlogs which never materialized resulting in only 3% achievement of the planned harvest volumes.

Average actual total volume per hectare was within 1% of the planned average volume per hectare for the 1997-2001 planning term (78 m^3/ha vs. 77m^3/ha). This close correlation between planned and actual volumes per hectare is indicative of having good growth and yield data for planning and as well as good experience on the unit.

Planned annual harvest area as a percentage of total production forest has remained relatively stable over the past two planning terms. The slight decrease which has occurred over the 1992 and 1997 plan terms is the result of bypassing stands due to operational constraints or low volumes.

During the 1997 term there was a shift from harvesting jack pine to harvesting spruce to address the abundance of over-mature jack pine and spruce. In past plans jack pine stands were initially targeted for removal to deal with potential mortality issues due to old age. Spruce stands were "stored" on the stump as the species is longer lived. Having achieved the desired jack pine harvest the focus is now being turned towards harvesting spruce resulting in significant reductions in the planned harvest forecast for jack pine and an increase in the forecasted spruce harvest in the 2006 FMP.

Trends in the achievement of planned silviculture must be assessed in the context of only four years of operation during the 1997 FMP term. When adjusted to the four year term the actual achievements of planned levels are typically within 10% of planned levels. Shortfalls in mechanical site preparation (11% less than planned) and artificial renewal (12% less than planned) reflect a lack of available area due to lower than planned harvest. Significant shortfalls in achieving planned levels occurred with respect to aerial seeding (37% less than planned), pre-commercial thinning (64% less than forecast), aerial tending (27% less than planned) and ground chemical tending (23% less than planned). The shortfall in pre-commercial tending was the result of a lack of areas containing sufficient densities to warrant the treatment. Chemical tending treatment (i.e. aerial and ground) and the aerial seeding shortfalls were attributed to a lack of suitable sites (i.e. seeding sites were too dry or had the potential for significant competition) and overestimates in the FMP forecasts. With respect to the renewal and maintenance of the Forest for the last two complete FMP terms approximately 81% of the planned harvest area was harvested and 78% of all planned renewal activity was achieved. This trend suggests that forest sustainability was not at risk.

Areas surveyed for regeneration success indicate that the forest is regenerating. For the 1992-1997 FMP term 84.4% of the surveyed area was satisfactorily regenerated.

It is our opinion that none of the reported trends indicate a risk to forest sustainability.

Achievement of Forest Sustainability

Assessment of forest sustainability includes an examination of measurable indicators of forest sustainability criteria, and an analysis of changes to forest and socio-economic conditions. At the management unit level, the FMPM has five criteria which are used as indicators of forest sustainability:

- Biodiversity.
- Forest Condition and Ecosystem Productivity.
- Soil and Water Conservation.
- Multiple Benefits to Society.
- Accepting Society's Responsibility for Sustainable Development.

To arrive at our assessment of the achievement the sustainability criteria (Table 10) we reviewed:

- the steps taken to produce the 2006 FMP including the analysis of Objectives, Strategies and Management Alternatives,
- the Achievement of the 2001 FMP Management Objectives,
- the RPFO Assessment of Sustainability, and
- the Comparison and Trends Analysis of Planned vs. Actual Forest Operations Report.

TABLE 10. SUMMARY OF ACHIEVEMENT OF FOREST SUSTAINABILITY INDICATORS

Forest Sustainability Criteria	Met (yes/no/partial)	Audi Team Comments
Biodiversity	Yes	Cover types and wildlife habitat areas were within 20% of the bounds of natural variation; clearcut/wildfire sizes moved toward natural disturbance frequencies; landbase changes inhibited the quantitative assessment of old forest targets.
Forest Condition and Ecological Productivity	Yes	The total productive Crown forest for the Pineland portion of the former PMF has increased from a low of

		323,899 ha in 1987-1992 to a high of 329,244 ha in 2006-2011; site productivity is not diminished and a range of naturally occurring species is being maintained.
Soil and Water Conservation	Yes	Planning and management objectives were met; the area disturbed in second order watersheds declined from previous plan terms.
Multiple Benefits to Society	Partial	The setting aside of 57,118 ha of marten core areas were deferred from harvest helped to ensure long term wildlife and ecological benefits. The SMA scored highest for indicators of sustainability and was designed to try to ensure stable social and economic benefits; wood harvested was lower than anticipated and only 78% percent of the forecast (AHA) was utilized resulting in somewhat lower benefits than anticipated. First Nations signed an agreement which involved them in forest management activities.
Accepting Society's Responsibility for Sustainable Development	Yes	There was extensive First Nations involvement in a modified FMP consultation / participation process; the SMA included adequate funding for anticipated silviculture activities; the LCC was pleased with their participation on the planning process.

Sustainability Conclusion

The IFAPP requires that the auditor provide an opinion on the achievement of management objectives and forest sustainability. Based on our audit findings we conclude that the forest management objectives have been substantially achieved and that the Pineland Forest is being managed sustainably.

However, we have some concerns about the assurance of longer term sustainable forest management. These concerns are based on the following;

- Inadequate funding and high rates of staff turnover at OMNR which has hampered the delivery of OMNR values collection.
- The inability of forest managers to track some forest sustainability indicator trends through time due to changes to the planning landbase and by a lack of data consistency between plan terms (i.e. changing definitions of forest units and wildlife habitats), and the changing requirements of forest management planning.
- The forest age class imbalance provides significant operational and planning challenges with respect to the attainment of a sustainable balance between habitat targets, required fibre supplies and the protection of values in a manner that emulates a natural disturbance regime.
- There are a number of factors leading to reductions in wood supply in Northeastern Ontario. These include changes in age-class structure, guideline implementation and historical forestry practices. Significant decreases in wood supply imply not only losses of economic opportunity but also result in job losses by affecting the viability of existing facilities. Ministerial supply commitments in excess of future projected supplies exacerbate the issue of declining supply.
- Artificial forest renewal strategies (and hence the future forest species composition, product mix and merchantable volumes) are highly dependent on the matching of site preparation equipment to on-site slash conditions. There will need to be optimal utilization of plantable spots on treated cutovers with the corporate transition to a cut-to-length harvest system. Domtar must improve its silvicultural effectiveness monitoring program (including record keeping) to ensure its silvicultural investment in site preparation and tending (discussed below) is not lost.
- The competitive nature of most of the artificially renewed sites on this Forest indicates that any additional delay in treating sites can result in the loss of investment in regeneration through seedling mortality, losses in growth, and/or the extension of the time period required for renewed areas to reach free-to-grow status. In our view, the on-going use of chemical herbicide treatments is an essential component of the strategy to address the looming wood supply shortage on the Forest. Public opposition and

forest certification requirements with respect to the use of herbicides could potentially have a significant impact on long term industrial wood supply.

- Forest management deferrals resulting from the application of the IEA process delayed forest management activities on the Pineland Forest. As a result of the deferrals treatment backlogs exist and some losses of the investment in site preparation and forest renewal have occurred. Additionally, timelines for achieving the intended effects of silvicultural (i.e. improvements to growth and yield by reduced vegetative completion) have been extended. These circumstances have implications with respect to the achievement of FMP objectives and sustainable forest management. Monitoring of sites and remedial action(s) will be required to ensure that investments in silvicultural are not lost and that long term forest management objectives are achieved.

3.8. Contractual Obligations

SFL # 550816 has a conditional term (2006-2026) and a requirement that the renewal of the licence is contingent upon the Minister of Natural Resources being satisfied that there has been compliance with the terms and conditions of the licence based on the results of the 2002-2007 Independent Forest Audit for the former Pineland Forest. We present our findings on the SFL compliance with the contractual obligations of the SFL in Table 11.

TABLE 11. SUMMARY OF CONTRACTUAL OBLIGATIONS AND AUDITOR COMMENTS ON THE LEVEL OF ATTAINMENT OF THE CONTRACTED OBLIGATIONS FOR SFL # 550816

Contractual Obligation	Level of Attainment
1. Complied with the terms and conditions of the SFL.	Our assessment is that the Company substantially complied with the terms and conditions of the SFL. Although the Action and Status Reports were late, they were completed as required. Wood supply commitments that were not met were beyond the company's control.
2. Paid up to date all annual area (if applicable), forestry futures and Ontario Crown Charges.	Payments were up-to-date
3 The company must comply with the wood supply commitments specified in the SFL licence documents.	Commitments include; Grant Forest Products Inc : 172,044 m^3/yr (5 years 860,220 m^3) poplar and 35,000 m^3/yr (5 years 175,000m^3) white birch Norbord: 21,000 m^3/yr (5 years 105,000 m^3) poplar Pineal Lake Lumber Company Ltd.:

	2,600 m^3/yr (5 years 13,000 m^3) white and red pine Actual wood delivered: Grant Forest Products Inc.: 344,851 m^3 poplar and 4,668 m^3 white birch Norbord: 103,963 m^3 Wood supply commitments were met. The lack of uptake was directly related to the general economic down turn in the forest industry. The Grant Forest Products Inc. plant in Timmins has been closed for 1 year due to a strike.
4. Ensure the allowable harvest level in the FMP met the actual SFL condition, and where that was not sufficient, ensure sharing arrangements stated in the SFL were carried out.	Wood supply commitments were met by the calculated harvest levels.
5. Prepare FMP, AWS, and other reports in accordance with the CFSA and the FMPM and abide by those reports and other requirements described in the FMFM and CSFA.	For the 2001 FMP the manual guidelines and policies were followed as required. The 2001 and 2006 FMP's that were submitted by the company were deemed sustainable by OMNR. The FMP and AWS's were submitted on time. The AR's were submitted on time. There was no issue with respect to AR completeness and accuracy except for compliance reporting.
6. Conduct inventories and surveys that are the responsibility of the SFL and carry them out in accordance with the FIM.	Inventories and regeneration surveys were completed. There is a requirement for Domtar to ensure the timely delivery of silvicultural effectiveness monitoring.
7. Provide information that is the responsibility of the SFL, and collect that information in accordance with the FIM.	All information requirements were met and collected in accordance with the FIM.
8. The SFL company shall not commit wasteful practices as described in the Forest Operations and Silviculture Manual or the Scaling manual.	There were no instances of wastage reported as Not In Compliance during the audit period or observed during our field inspections.
9. SFL conditions related to natural disturbance and salvage must be followed.	There were salvage harvests in 2001. All required salvage operations were appropriately planned and all approvals were received.

10. The SFL company will participate in pest control programs in accordance with SFL conditions.	A number of pest control (herbicide) programs were in effect. Notices were given and signs were placed in accordance with SFL conditions.
11. Where land is withdrawn from the licence area the conditions in the SFL related to withdrawals shall be followed.	There were no land withdrawals on the licence.
12. Prepare an Audit Action Plan responding to audit recommendations within 2 months of receiving the final audit report. Implement the Action Plan. Prepare a Status Report within 2 years of approval of the Action Plan. **Note**: The Action Plan and Status Report are jointly prepared by the OMNR and SFL holder.	Both the Action Plan and Status Report were approximately 8-12 months late. The reports contained all the required material including specific actions, timelines, reporting milestones and named the staff positions responsible for delivering the actions.
13. The SFL company shall pay all renewal charges to the Forest Renewal Trust and comply with all terms of the Forest Renewal Trust Agreement.	All renewal charges were made and complied with the terms of the Forest Renewal Trust Agreement.
14. Forest renewal charges will be analyzed and determined in accordance with SFL conditions. The analysis will be undertaken in conjunction with the term of the FMP.	The 5 year analysis of the forest renewal trust account was completed as required. The company completed an annual analysis of their Silvicultural costs and expenditures in order to determine what the expected costs would be in the next operating season.
15. The minimum balance must be maintained in the Forest Renewal Trust Account each March 31st.	The minimum required balance for the Pineland Forest is $2,112,100. The minimum balance was retained each year.
16. Maintain records and maps of eligible silvicultural work implemented from the Renewal Trust Account.	A 27% sample of the Renewal Trust account projects determined that maps were accurate and work was completed as invoiced.
17. SFL conditions related to silvicultural standards must be followed. Meet silvicultural standards on X and Y lands, or Category 2 lands- regardless of who did the harvesting or eligible silviculture work.	There are no X or Y lands on the Forest. Silvicultural standards were met on all lands. FMP silvicultural ground rules were implemented in accordance with all the appropriate guidelines and manuals on all sites inspected during the

Undertake tending in class Z areas and ensure documentation and mapping. Category 1 lands must be mapped and documented.	audit. Silvicultural activities were appropriate for the site conditions.
18. Report on the achievement of regeneration including the assessment of free-to-grow and preparation of stand descriptions for entry into the inventory.	The Annual Report AR 14 included reports of the achievement of regeneration.
19. The SFL company shall work co-operatively with local aboriginal communities to identify and implement ways of achieving more equal participation in the benefits provided through forest management planning.	First Nations located adjacent to or near the Forest include the Mattagami, Chapleau Cree, Chapleau Ojibwe, Michipicoten and Missanabie First Nations. The Mattagami First Nation has demonstrated an active interest in the Pineland Forest. It is actively involved in logging and has contracts with Domtar for an annual harvest of approximately 45,000 m^3 (across a number of Domtar SFLs). The community has invested in forest harvesting equipment and has been expanding into silvicultural operations. The Chapleau Cree First Nation has plans to build a cedar mill which will receive cedar from the Pineland Forest. All First Nations participated in a First Nation Task Team that had input into the forest management planning process.
20. The SFL company shall prepare a forest compliance plan in accordance with all standards established by OMNR.	The Five-Year Forest Compliance Strategy (Plan) was completed to standard in the FMP. All AWS contained Annual Plan(s) of Action (Schedule) as required.
21. The SFL company shall establish and deliver an internal compliance prevention/education program and provide for individual staff training to competency standards approved by the OMNR.	The Company has an extensive internal compliance prevention and education program that is effective in minimizing non compliance in the forest.

22. The SFL company must conduct inspections of forest operations and deliver reports to OMNR in accordance with the company's approved compliance plan.	Forest operations inspections were completed as planned.
23. Where the SFL company undertakes activities on mining leases or claims it assumes responsibility for all forestry activities in those areas. The OMNR will advise recorded and patented claim holders of the company's intent. The company will be available to discuss concerns or conflicts.	The Company ensured all mining claim holders were notified prior to any forestry activities on any mining claim or lease.

Progress on Recommendations from Previous Audits

The 2002 Independent Audit conducted on the Pineland –Martel Forest was submitted in April 2003. The IFAPP requires that the OMNR and Company jointly prepare an Action Plan responding to audit recommendations within 2 months of the receipt of the final audit report. The Action Plan was approved by the Regional Director in April 2004. The Plan was received and approved by the Director of the Forest Management Branch May 2004, approximately one year late (due June 2003).

A Status Report summarizing progress on the recommendations is required within 2 years following the approval of the Action Plan. A draft Status Report was submitted in December 2006 (due May 2006) and a revised report was produced in January 2007. OMNR approval was received in February 2007.

The Action Plan and the Status Report were late. However, the preparation of both reports was a joint effort, with neither the Company nor the local OMNR able to dictate the timing or work priorities of the other. In our assessment, staff turnover and shortages, development of the 2006 FMP, an IEA request and the large number of recommendations from the previous audit (i.e. 18) all contributed to the late submission of the reports. We feel that both parties did the best they could within the constraints of available staff and workloads. Nevertheless the submissions were significantly late.

Recommendation #14:

The Regional OMNR, District OMNR and Domtar should meet deadlines associated with the Independent Audit Action Plan and Status Report deadlines.

The Status Report provided a detailed overview of the issues leading up to the recommendation, relevant background and detailed analysis and reporting of the ongoing actions. We have completed a number of IFA's and these reports were the most comprehensive we have encountered.

Our assessment of the reported progress and completion of the Action Plan items is discussed below in Table 12.

TABLE 12. ASSESSMENT OF 2002 IFA ACTION PLAN ITEMS

Recommendation	Audit Plan Action (May 2004)	Status Report (January 2007)	Auditor Assessment
OMNR should ensure that the First Nation Liaison Officer position in Chapleau District is consistently and continuously available.	District will continue to support the contract position within financial limitations.	Position has been maintained. Request has been submitted for a permanent position and funding.	The District has done everything within its authority and funding to respond to this recommendation. A permanent Resource Liaison Officer position has been approved and was posted during the week of the field audit.
OMNR should continue to provide support to enable the First Nations Communications Protocol to evolve and develop in the most effective directions.	District will continue to request provincial funding, and use District funding to support the protocol. An attempt will be made to share administration and meeting responsibilities with the members.	Protocol no longer active due to internal disputes. Intent to foster better communications has been continued. In 2004 a First Nation Task Team was developed to participate in the Pineland and Martel FMPs.	The District has done a good job in using proactive and innovative means to enhance communications with First Nations and involve them in forest management planning. The First Nation Task Team met for a two years and provided input into the 2006 planning process. The Team was funded with forest planning funds, and OMNR provided funding for 8 additional meetings

			to obtain input on other district issues such as land use planning. The Team is currently not meeting; however, we were informed it would likely be reconstituted with the onset of the Spanish FMP. This item is discussed in Section 3.2.3.
Corporate OMNR should fulfill its obligations to provide accurate and timely values information for use in forest management.	The District will continue to apply for funding for values information.	Funding was received in 2003/04 and 2004/05. Funding was not received in 2005/06 or 2006/07. District is working on strategies to develop alternate means of collecting data and create efficiencies.	Our analysis indicated that the OMNR is generally providing funding only where it has a legal requirement associated with development of new FMP's. Where forest management planning is not being undertaken little or no funding is provided. While this pragmatic approach is dictated by limited funding it does raise questions about OMNR's long term commitment to its obligation to collection and maintain non-timber values information. This is discussed in Section 3.3.7.
The Company should develop a strategy for the management of mixedwoods on the Pineland –Martel Forest, to be included in the next	Identify the lack of a mixedwood management strategy as an issue in the FMP. Develop a mixedwood strategy using existing	Completed and present in the 2006 FMP as a planning issue. A mixedwood Management strategy is present in the 2006 FMP.	This Action plan item has been completed.

FMP.	silvicultural guides and relevant research. Incorporate the new strategy into the SGRs.	SGRs include options designed to create a "softwood leading" future mixedwood stands.	
Within one year of the approval of the Action Plan from this audit, the Company should implement a program to reduce the occurrence of rutting on the Pineland-Martel Forest, which includes harvest contingency planning, contractor training and monitoring.	Site maps containing Forest Ecosystem Classification (FEC) information will be made available for company harvest and site preparation operators along with or on AWS maps. OMNR will be requested to provide site disturbance training as part of the provincial forest competency training.	Formal OMNR "train the trainer" disturbance training completed by Domtar employees. Site disturbance training is currently part of Domtar's EMS training for employees. Site sensitive mapping completed for 2001-2006 harvests. Site sensitive information was highlighted at meetings with contractor staff. Site disturbance monitoring emphasized as part of regular compliance inspections.	There were no signs of rutting during our field inspections.
Corporate OMNR should recognize slash pile burning as a separate lower risk class of prescribed burn and streamline the review and approval process.	Effective April 2003 OMNR approved a streamlined prescribed burn process for low complexity slash pile burns called the Low Complexity Prescribed Burn Plan for Slash Pile Burning.	Implementation of the new direction had been undertaken for the duration of the 2006 FMP.	This Action plan item has been completed.
The Company should immediately begin to work with its site preparation contractors to	Company SOPs will be updated to address the recommendation. Site sensitive	Site preparation Work Instruction has been added to EMS. Site sensitive information has	Improvement has clearly occurred. We did not observe any significant issues associated

ensure that SIP projects are implemented so as to minimize undue soil disturbance on wet areas and on steep slopes.	information will be contained in the SGR's. Site disturbance information highlighted at contractor meetings. The Compliance plan will be amended to include site disturbance information as part of the start-up meeting checklist for silviculture operations.	been collected from all available sources and made available to company staff and site preparation contractors. Rather than being included in the Compliance plan a separate Start-up meeting checklist for silviculture activities references site disturbance information.	with soil disturbances.
The OMNR should develop a practical solution, by March 31st, 2004, to the issue of beaver dams that threaten to flood or wash out access roads in the Chapleau Game Preserve.	Chapleau OMNR to develop a practical solution to the issue. The problem is aggravated by the restriction on hunting and trapping in the Preserve. An existing Beaver Handbook: A Guide to Understanding and Coping with Beaver Activity provides some direction.	A draft Nuisance Beaver Decision Tree has been developed and will be tested during 2007. The draft document will be made available to the LCC, First Nations and Trappers Council for review.	This is a difficult problem common across Ontario. The Chapleau District has developed a systematic process with appropriate monitoring and feedback mechanisms to measure progress. They have responded appropriately to the recommendation.
The company should implement efforts to reduce cross drainage problems and ponding on tertiary roads.	Information will be included in company access road construction Standard Operating Procedures (SOPs). Intermittent steams and topographic features will be added to AWS operations and other maps to assist in identifying potential cross road drainage locations.	EMS road construction describes procedures when installing drainage culverts. AOC prescriptions for intermittent streams are in the 2006 FMP. Training included in EMS orientation. FOIP reports include information related to cross drainage.	Our field inspection indicates that this action is being implemented.

The Company should investigate the feasibility of site preparing and planting tertiary roads.	Company will investigate and field test the feasibility of planting additional tertiary roads.	Feasibility document produced indicating winter tertiary roads had good regeneration success while summer roads had less positive results due to dry and compacted soils. Domtar is acting on the results where appropriate.	We saw sites in the field that corroborates planting success on winter tertiary roads. We believe the Company is doing all that is reasonable to replant tertiary roads.
Local OMNR should have field time targets included in their annual plans that require them to spend enough time in the Forest to ensure their working knowledge of the local forest conditions remains accurate.	OMNR Supervisor required will identify field time for appropriate staff. "Field time "targets will be in the Performance Development Plan (PDP) for each individual.	"Field time" targets were developed and reported on for the 2004-05 and 2005-06 periods. Reported results ranged from 60% of target to full achievement.	The Company, LCC members, members of the public and OMNR staff were emphatic that OMNR staff does not spend enough time in the field. In our opinion the "field time" targets were minimal and the fact that some staff only achieved 60% of the target suggests that the problem remains. This is discussed in Section 3.5.1.
The Company should report the results of the free – to-grow surveys conducted for inventory update purposes separately from the results of surveys conducted to determine silvicultural effectiveness, so the success rates of silvicultural treatments will be more accurately reflected in the Annual Reports.	Free-to-Grow (FTG) information will be identified separately. FTG area for inventory update will be identified separately in Annual Reports.	Annual Reports uniquely identifies silvicultural success from regeneration success. Area declared FTG is tracked separately in the Domtar FTG layer.	Shortfalls in achieving planned levels of surveys occurred during the audit period. A need exists to address the backlog of area classified as "depleted" and a recommendation is provided.

Each year, OMNR should prepare annual compliance operations plans, which address forest compliance monitoring consistent with OMNR policies, and assign staff for field inspections consistent with its responsibilities to monitor forest operations.	Responsibilities for specific work associated with the ACOP were assigned within the OMNR District. District Annual Compliance Operations Plan. (ACOP) are to produced as required in future years.	ACOPs were produced for 2003-04, 2004-05, 2005-06 and 2006-07. ACOP set a compliance level of 20% of harvest and access inspections that has been met or exceeded since 2003.	The Company has well trained contractors and the compliance rate is good. The ACOPs were completed and set targets for field inspections. The target of 20% for harvest and access inspections is acceptable as long as the compliance rate remains good.
The OMNR and Company should identify and achieve a joint number of inspections, set in their annual compliance plans.	Company and OMNR will mutually set a target number of joint inspections and/or joint compliance field trips. Joint inspections are not to take the place of other inspections that are the normal responsibility of each party.	Eight joint inspections were completed during the plan term. Joint compliance inspections are documented in both the old FOCIS reports and in FOIP.	Joint inspections have specific purposes related to ensuring consistency of assessment of field activity. We are satisfied that the Company and OMNR have complied with this recommendation.
OMNR should set an appropriate target in its annual compliance operations plan for the number of inspections it is to perform, and achieve this target.	ACOP identifies harvest, access, renewal and maintenance targets.	Since 2003 the ACOP has a 20% target for inspections of scheduled blocks. Target has been met for 2003-04, 2004-05, 2005-06.	Completed. The compliance on the forest is good.
OMNR should ensure that accurate AR-12 tables are produced for the annual reports.	All compliance reports will be recorded in the Compliance Information System (CIS) as per the date the FOCIS report is submitted. Annual report 12	AR-12 tables are provided to the SFL by corporate OMNR. Information in these tables comes from FOIP.	The FOIP system is better than FOCIS at tracking reports and not duplicating reports for the same event. This results in better accuracy of AR -12 and AR- 13 tables. We are

	will be produced from the CIS data annually.		satisfied that the AR 12's and 13's from FOIP are accurate and this issue is resolved.
Corporate OMNR and the forest industry should develop a set of principles for setting hardwood renewal rates.	OMNR has produced draft principles. These will be tested and then will be provided to the forest industry. Following industry comments the principles will be finalized for 2004-05.	A working group of industry and OMNR staff was formed in 2005 that developed a process for determination of renewal charges. The approved recommendations and process sent to the Districts for implementation.	This Action Plan item has been completed.

4.0. Summary of Conclusions and Recommendations

Fourteen (14) recommendations and 3 suggestions are provided to address issues identified during the audit.

Commitment

Domtar complied with all IFAPP requirements with respect to development of corporate directions and commitments to forest and ecosystem sustainability, communications and training.

At the corporate level the OMNR had produced comprehensive documents related to all aspects of forest sustainability. Those documents and messages were evident in the OMNR Chapleau District and staff were aware and supportive of them. However, our assessment is that the District has reached the point where it can no longer "walk the talk" for some aspects of its mandate. Successive years of staff turnovers, staff shortages and chronic funding shortages have resulted in minimal responses to values information data collection, access enforcement obligations and compliance monitoring obligations.

Public Participation

Public participation in the 2006 FMP planning process met the requirements of the FMPM.

All requirements with respect to First Nation consultations and efforts to involve them in forest management were met. The Chapleau OMNR was proactive and innovative in supporting a FNTT. The work of the FNTT appeared to bridge some previous communication and cultural gaps associated with forest planning.

The LCC was properly established and was involved in the preparation of the plan. OMNR and Domtar were supportive of the LCC and LCC members felt their input to forest management was meaningful and respected by OMNR and Domtar.

We are concerned that the IEA process can be initiated without prior involvement in the forest management planning, consultation and dispute resolution processes. We are also concerned that provincial level issues such as the use of chemicals in forest management are being debated through a local FMP process at the expense of local industries and communities.

Forest Management Planning

The 2006 FMP planning process was in accordance with FMPM requirements. The planning team functioned efficiently.

Domtar and OMNR worked diligently to develop Resource Stewardship Agreements; however no RSA's were completed. We question the time and costs associated with the RSA process relative to the results.

Operational planning requirements were fully in compliance with the FMPM.

Plan Implementation

The implementation of the Forest Management Plan during the audit period was in compliance with FMPM requirements. In our opinion, the forest is well managed.

- The area renewed is generally in balance with the area harvested.
- AOC's were properly planned, implemented, and monitored.
- There was good regeneration success.
- Wood utilization on inspected harvest areas was good.
- There was a good compliance record on the Forest.
- All crossings we examined met all standards and requirements in effect at the time.
- Harvest and renewal efforts were approved in the AWS and SGRs were appropriate and properly implemented.

However, there were some shortcomings and concerns:

- A significant land area classified as depleted in the forest inventory requires assessment for free-to-grow status.
- An improvement in the field monitoring of silvicultural effectiveness is required to ensure that investments in silvicultural are not lost.
- The OMNR Chapleau District faces serious issues with respect to funding and staff turnovers that undermine its effectiveness.
- There needs to be better adherence to submission deadlines for some mandatory documents.
- Continual changes to forest management guidelines, forest boundaries and reporting standards impair the assessment of long-term sustainability.
- Long-running land use issues associated with access restrictions require resolution.
- The process for regulating replacement area(s) for the Woman River Complex Conservation Reserve (C1564) needs to be finalized.

System Support

OMNR and Domtar had effective training programs and document maintenance and control systems.

Staff in both organizations were knowledgeable and professional in carrying out their responsibilities. We believe the OMNR has a major issue with respect to staff turnover, staff shortages and funding shortfalls.

Monitoring

Domtar produced a very clear and well-organized Five Year Compliance Strategy. The OMNR produced comprehensive Annual Compliance Operation Plans. The level of compliance inspection activity was appropriate and a good compliance record has been achieved. Some issues related to the late submission of reports were noted.

In general, an acceptable monitoring program is being implemented by Domtar, its contractors and the OMNR. However, we believe that Domtar could still improve on the delivery of its silvicultural effectiveness monitoring program.

Achievement of the Management Objectives and Forest Sustainability

Based on our assessment of field performance and of current FMPM sustainability criteria, our documentation review and our assessment of the achievement of management objectives we conclude that the Pineland Forest is being managed sustainability.

However, we have some concerns about the assurance of longer term sustainable forest management. These concerns include:

- Inadequate funding and high rates of staff turnover.
- The inability of forest managers to track some forest sustainability indicator trends.
- The forest age class area imbalance provides significant operational and planning challenges.
- Reductions in wood supply.
- Needed improvements to silvicultural effectiveness monitoring.
- Public opposition and forest certification requirements with respect to the use of herbicides could potentially have a significant impact on long term industrial wood supply.
- The IEA process and its economic effect on communities dependent on the forest.

Contractual Obligations

Contractual obligations were met.

5.0. Audit Conclusion

During the audit period Domtar was in compliance with the legislation, regulations, and policies that were in effect at the time of the audit.

We conclude that the Pineland Forest is being managed sustainably, and Domtar met its management obligations.

Recommendation #15:

The Minister of Natural Resources should extend Domtar Inc.'s Sustainable Forest Licence SFL # 550816 for a further 5 years.

Table 13 provides a summary of our audit recommendations and suggestions by IFA principle.

Table 13. Summary of the Audit Recommendations and Suggestions

Principle 1: Commitment
No recommendations or suggestions.
Principle 2: Public Participation
Recommendation #1: The Chapleau District Manager should review the LCC membership list and remove those members who habitually show no interest in attending LCC meetings and make no effort to participate in LCC business/functions. **Recommendation #2:** Corporate OMNR should encourage the Ministry of the Environment to explore mechanisms that require participation in the FMP planning process as a pre-requisite to entry into the Individual Environmental Assessment process. **Recommendation #3:** Corporate OMNR should encourage the Ministry of the Environment to explore mechanisms that would consider Individual Environmental Assessment requests at a scale appropriate to the concern (i.e. local vs. provincial). **Best Management Practice** The Chapleau District's First Nation Task Team is a proactive and innovative approach to cross cultural communications in forest management planning. The FNTT was a positive influence in bringing forward aboriginal perspectives in the development of the 2006 FMP.

Suggestion #1:

Corporate OMNR should review how it will respond to different types of First Nations values information, including verification parameters and acceptable costs. That information should be provided to planning teams.

Principle 3: Forest Management Planning

Recommendation #4:

OMNR should review and revise Ministerial wood commitments for aspen from the Pineland Forest in the context of projected wood supply and with due consideration of the wood supply implications arising from the implementation of the various forest management guidelines.

Recommendation #5:

OMNR must complete regulation of the C1564 replacement areas in time for the preparation of the 2011 Pineland FMP.

Suggestion #2:

Corporate OMNR should review the RSA process as it would benefit from a more streamlined approach and a modification of timing of tourism consultations.

Principle 4: Plan Implementation

Recommendation #6:

The Chapleau District should evaluate and report to Corporate OMNR on the current status of its values database and its effectiveness in meeting OMNR CFSA obligations for forest management. On the basis of the report findings and recommendations, Corporate OMNR should establish and deliver a five-year funding commitment for values collection and maintenance in the Chapleau District.

Recommendation #7:

Domtar should accelerate its free-to-grow survey program for depleted lands to determine the status of the backlog areas for the development of the 2011 FMP.

Recommendation # 8:

Domtar must ensure that its silvicultural effectiveness monitoring program is a priority activity on the Forest with adequate staff and time allocated for effective program delivery.

Recommendation #9:

The OMNR Regional and District staff should review the need, location and types of controls required for access restrictions, investigate the full range of enforcement options and adequately fund whatever option it decides to pursue.

Suggestion #3:

Domtar should conduct a thorough review of the post renewal forest succession assumptions during the development of subsequent Forest Management Plans.

Principle 5: Systems Support

Recommendation #10:

Corporate and local OMNR should conduct a detailed review of Chapleau District staffing, workload and funding issues to determine why staff has limited field presence on Forest and implement corrective actions.

Principle 6: Monitoring

Recommendation #11:

Domtar and OMNR should comply with FIM reporting requirements for FOIP's.

Recommendation #12:

Chapleau OMNR and Domtar must implement the start-up notification requirements of the approved 5 Year Compliance Plan and adhere to the requirements of the Compliance Manual.

Principle 7: Achievement of Management Objectives and Forest Sustainability

Recommendation #13:

Corporate OMNR should fully consider the effect of on-going changes to boundaries and guidelines on its ability to measure the effectiveness of any particular initiative and report on their cumulative effect on forest sustainability.

Principle 8: Contractual Obligations

Recommendation #14:

The Regional OMNR, District OMNR and Domtar should meet deadlines associated with the Independent Audit Action Plan and Status Report deadlines.

Summary of Conclusions and Recommendations

Recommendation #15:

The Minister of Natural Resources should extend Domtar Inc.'s Sustainable Forest Licence SFL # 550816 for a further 5 years.

Appendix A

Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report.

The Comparison and Trend Analysis of Planned vs. Actual Forest Operations is prepared by the forest manager (Domtar Inc.) responsible for forest management on the Pineland Forest. We include this report without modification or adjustment.

Domtar

PINELAND FOREST

COMPARISON & TREND ANALYSIS OF PLANNED vs. ACTUAL FOREST OPERATIONS

2001-2021 FOREST MANAGEMENT PLAN

Prepared for the 2007 Independent Forest Audit of the Pineland Forest

Michael J. Forrest, R.P.F.
Domtar Inc.

April 19, 2007
Date

RPF Seal

1.0 INTRODUCTION

This trend analysis report has been prepared for the 2007 Independent Forest Audit of the Pineland Forest. Its purpose it to compare the planned and actual achievement of forest management activities carried out on the Pineland Forest (PLF) under the 2001-2006 Forest Management Plan period. Data from previous plan terms for the Pineland Forest (i.e. 1992-1997, 1997-2002) are included to permit the analysis of trends.

Although the 2001-2006 Forest Management plan was prepared for the amalgamated Pineland-Martel Forest, this report is specific to the Pineland portion only. The Pineland-Martel Forest was established on April 1st, 2001 following the amalgamation of the Pineland Forest and the J.E. Martel Forest. During the preparation of the 2006-2026 FMP for the Pineland-Martel Forest, a business-to-business arrangement between Domtar and Tembec was negotiated which resulted in the closing of Domtar's sawmill operation in Chapleau and the transfer of the former J.E. Martel Forest to Tembec. From that point forward in the planning process two separate FMP's were prepared, with Domtar responsible for the stand-alone Pineland FMP. As a result of this change in forest management planning responsibilities this report has been prepared specifically for the Pineland Forest. Data and the analysis of trends are therefore based on the 1992-1997, 1997-2002 and 2006-2011 FMP's for the Pineland Forest. On direction from MNR Northeast Regional staff, the tables and graphs associated with this report also include data from the 2001-2006 Pineland-Martel Forest for illustrative purposes only.

Within the context of MNR's forest management planning process, the 2006-2011 FMP was the first one to be written for the Pineland Forest since the amalgamation of the Pineland Forest with the J.E. Martel Forest in 2001. Previously, separate management plans were approved for the Pineland Forest. Prior to the 2001-2006 PMF FMP two separate plans were written and approved for the Pineland Forest, 1992-1997 and 1997-2002. As a result of the 1998 Ontario Judicial Court Decision declaring three 1996 forest management plans "null and void" for failure to comply with the Crown Forest Sustainability Act, Domtar and the MNR made the decision to renew the 1997 PLF FMP one year early. Therefore, only four-years of operations took place under the 1997 FMP, (i.e. 1997-2001).

The Pineland Forest is located within the Ministry of Natural Resources administrative districts of Chapleau and Timmins, which are in turn administered regionally by the Northeast Region office in Timmins. The Chapleau District of the Ministry of Natural Resources acts as the lead district for all forest management planning related activities on the Forest. Figure 1 illustrates the location of the Pineland Forest in the context of the MNR districts and Northeast Region.

Forest management planning has been the responsibility of Domtar and its predecessor companies since the signing of the Forest Management Agreement in 1982. The Pineland Forest is currently managed by Domtar Inc., as a Sustainable Forest Licence (SFL # 550816), established to provide a continuous supply of forest products to Domtar sawmills in Timmins, Ostrom, Nairn Centre and the pulp mill in Espanola and to ensure that the forest is managed sustainably. Under the terms of the SFL for the Pineland Forest, Domtar is responsible for directing the harvesting, renewal and planning for the forest, maintaining the Forest Resource Inventory (FRI) and monitoring compliance. Domtar Inc. coordinates these forest management activities through their Regional Office located in Timmins.

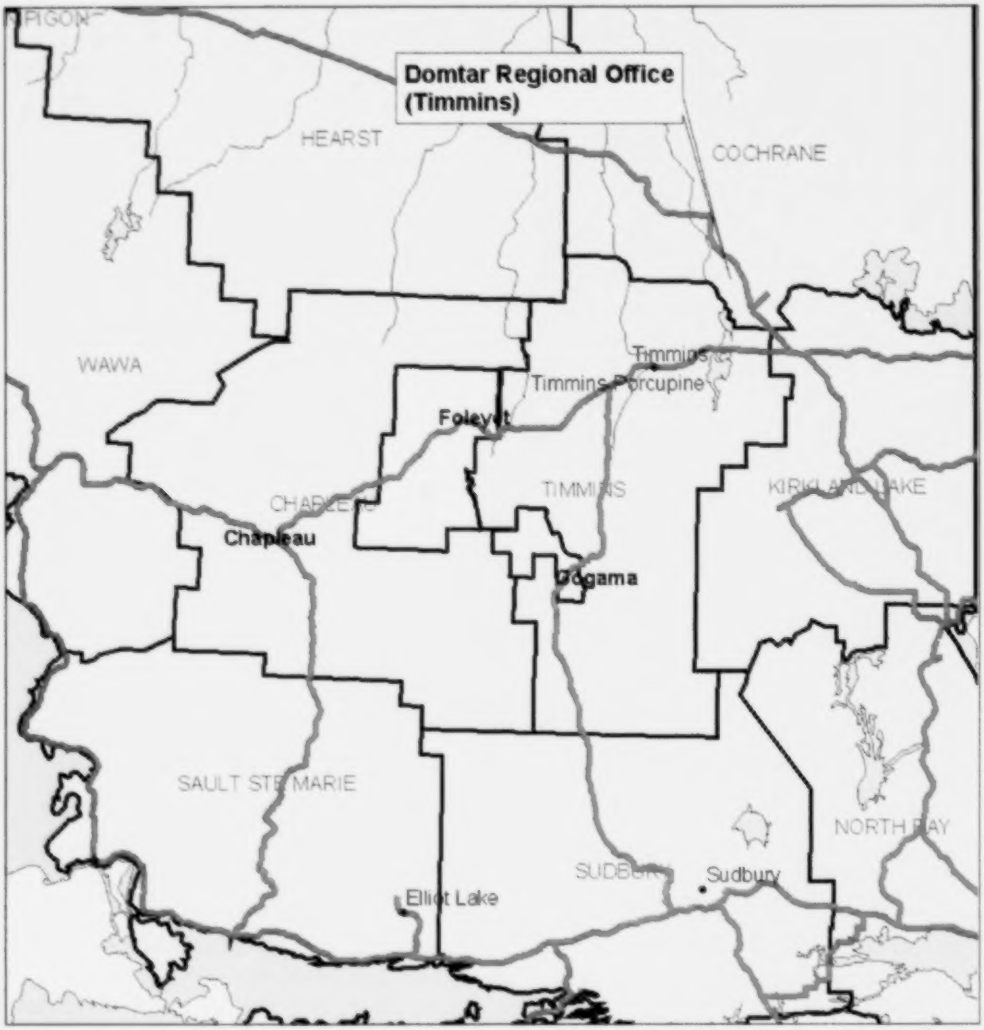

IPIGON
Domtar Regional Office
(Timmins)
HEARST
COCHRANE
WAWA
Timmins
Timmins Porcupine
Foleyet
CHAPLEAU
Chapleau
TIMMINS
KIRKLAND LAKE
Gogama
SAULT STE MARIE
NORTH BAY
SUDBURY
Sudbury
Elliot Lake

Figure 1. The Pineland Forest in Relation to MNR Districts and the Northeast Region

Legend
Rivers
Highways
Northeast Region
Lakes
Pineland Forest
MNR Districts
N
Scale: 1:2,000,000

2.0 Summary of Total Area Under Management

Table 1 summarizes the total Crown area under management for the Pineland Forest for the 1992-1997, 1997-2001 and 2006-2011 five-year planning periods. This information is also summarized graphically on the associated chart. The total Crown area under management for the Pineland –Martel Forest for the 2001-2006 FMP period has also been provided for illustrative purposes only.

The total Crown area under management for the Pineland Forest has changed since the approval of the 1992 Timber Management Plan (Refer to Table 1). The 1992-1997 TMP was based on the 1973 forest resource inventory. A new inventory was received in October 1995 (based on 1992 photography) and this formed the basis of the 1997-2001 FMP for the Pineland Forest. The re-inventory resulted in a slight increase in the total Crown area under management, mainly attributed to photo interpretation and a higher degree of accuracy in area measurement. Since the signing of the FMA in 1982, there has only been once change to the management unit boundary. The 9 whole/part townships in the former Gogama Management Unit were incorporated into the Pineland Forest in 1987.

In 1999 three new protected areas and expansion of one existing Provincial Park were identified on the Pineland Forest as a result of "Ontario's Living Legacy Land Use Strategy". The three new protected areas account for a total of 15,861 hectares of Crown land and the addition to the existing Provincial Park accounts for approximately 4,400 hectares of Crown land. Although these areas are considered to be part of the Pineland Forest, they are unavailable for timber production, and therefore have been deleted from the Crown managed portion of the Pineland Forest. The new protected areas include:

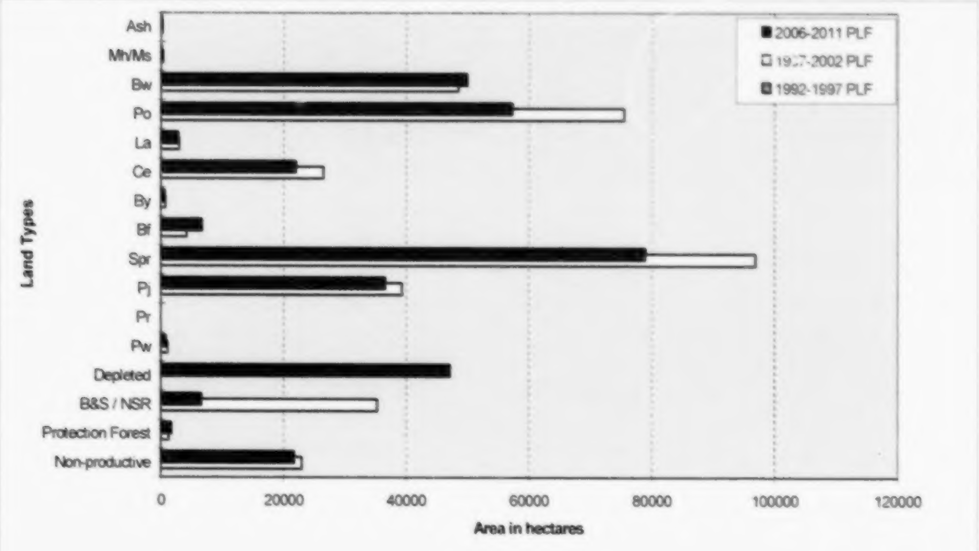
P-1557	Ivanhoe Provincial Park Addition
C-1558	Ivanhoe River Clay Plain Conservation Reserve
C-1565	Vimy Lake Uplands Conservation Reserve
C-1564	Woman River Complex Conservation Reserve

It is worthwhile to note that although the implementation of Ontario's Living Legacy Land Use Strategy is almost complete there remains one site on the Pineland Forest that requires revision. Issues still exist with the proposed Woman River Complex (C-1564). A detailed tenure search by MNR has shown that mining patents underlie all but a small portion of this conservation reserve, which to-date has precluded its regulation as a protected area. In January 2003, MNR embarked on a "gap-analysis" to assess the loss of ecological values associated with C-1564 and engage in a process to find replacement values and maintain the level of representation and the intent of the OLL. To-date a potential replacement area has been identified on the Pineland Forest, which may serve to replace a portion of the area associated with C-1564. At the time of preparation of the 2006-2026 FMP for the PLF the process for regulating this replacement area was still on going. It is anticipated that changes to the PLF landbase will occur in time for the preparation of the 2011-2021 FMP.

Table 1 also illustrates a decrease in the area reported as "B&S/NSR", and a significant increase in the area reported as "Depleted". The decrease in the amount of "B&S/NSR" area between the 1997 and 2006 PLF FMP's is due to the fact that the original FRI did not differentiate between older stands that have a naturally low stocking and young stands that appeared to have low

Table 1 - Summary of Total Area Under Management (Crown Managed)

Land Type	Area in hectares			
	Past Plan Terms			Current Plan
	1992-1997 PLF	1997-2001 PLF	2001-2006 PMF	2006-2011 PLF
Non-Forested				
Other Land	37,644	36,585	49,418	35,376
Forested				
Non-productive	28,349	22,975	32,285	21,748
Productive				
Protection	3,356	1,253	2,132	1,687
Production Forest				
B&S / NSR	67,743	33,117	15,499	6,598
Depleted	-	-	-	47,105
Forest Stands by Working Group				
Pw	853	1,071	1,367	789
Pr		-		-
Pj	30,384	39,331	70,645	36,593
Spr	83,962	96,865	150,967	78,914
Bf	10,404	4,170	6,806	6,712
By	563	676	676	633
Ce	14,360	26,503	41,029	21,964
La		2,949	4,575	2,803
Po	56,335	75,458	110,570	57,329
Bw	59,276	48,482	82,175	49,943
Mh/Ms	34	335	378	93
Ash	29	172	150	142
Total Production Forest	**323,943**	**329,129**	**484,837**	**309,619**
Total Forested Land	**355,648**	**353,357**	**519,254**	**333,053**



Source: 1992-1997 PLF FMP: 2002 IFA Trend Analysis, Table 1
1997-2002 PLF FMP: 2002 IFA Trend Analysis, Table 1
2001-2006 PMF FMP: FMPM(1996), Table FMP-1, FMP-2 Crown Managed (Provided for illustrative purposes only)
2006-2011 PLF FMP: FMPM(1996), Table FMP-1, FMP-2 Crown Managed (Excludes proposed OLL C1564 - 5,871 ha Reg & 9 ha Prot)

stocking because of their young age. To more accurately describe the PLF landbase for the 2006 FMP, the area of "B&S/NSR" in the original FRI was netted down to only include "True B&S" stands (i.e. older low stocked stands) naturally occurring on the Pineland Forest. Table 1 also illustrates that there is approximately 47,105 hectares of "Depleted" area on the PLF in 2006. This amounts to approximately 15% of the production forest area. Based on past harvest levels (i.e. 1997-2001 & 2001-2006 FMP's) this is equivalent to approximately 10 years of depletion area that has not received a FTG assessment. The area also includes forecasted depletion area from the 2001-2006 FMP for the three-year period from 2003-2004, 2004-2005 and 2005-2006. This amount of area is in line based on surveying from 5 to 10-years after treatment, relative to the applied Silvicultural Ground Rule.

3.0 Description of Forest Units

Table 2 defines the set of forest units for each of the separate planning period being compared in this report (i.e. 1992-1997, 1997-2001 and 2006-2011).

Forest units are aggregations of forest stands that have similar species compositions, would develop to follow a similar successional pathway naturally or in response to silvicultural treatments, and to which the same silvicultural system would apply. Determination of forest units is based on considerations such as the ecological attributes of the site, economics and forest product requirements.

Forest unit classification has been applied to the entire "productive forest" landbase of the Pineland Forest (including parks and protected areas), not just the portion that is managed for timber production. Parks and protected areas can provide a significant contribution to the overall conservation of biological diversity on the Forest. Thus, including these areas in the tabulation of forest units is necessary to enable the assessment of the achievement of specific management objectives on the entire forested landbase (e.g. Biodiversity objectives).

During previous plan terms, (i.e. 1992-1997 & 1997-2001) the Pineland Forest FMP's contained a distinct set of forest units unique to this landbase. The forest units developed for the 1992 TMP and 1997 & 2006 FMP's for the PLF are described in Table 2. During each of these three planning terms the forest units were revised to better reflect site and stand conditions on the forest. During the 2001 plan period (i.e. 2001-2006 PMF FMP) MNR developed a standard set of forest units for all managed Crown land in the Northeast Region to aid in regional planning and reporting. Both the 2001-2006 PMF FMP and the 2006-2011 PLF FMP used these standard forest units.

A total of fourteen standard forest units have been defined to describe the composition of the Pineland Forest. Some of these forest units may make up a very small percentage or may not even exist on a particular management unit. Similarly, there may be special circumstances where it is more appropriate to split a standard forest unit to more clearly define a specific type of forest condition based on silvicultural and/or product requirements. Under certain circumstances, MNR has permitted the local adjustment of some standard forest units.

The rational for designating specific forest units on the Pineland Forest can be found in the appropriate section of each TMP/FMP.

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Table 2 - DESCRIPTION OF FOREST UNITS - 1992-1997 Pineland Forest TMP

Forest Unit		Forest Type	Main Working Group	Site Types	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
PjX, 1	Jack Pine Site Class X, 1	Conifer	Pj	Site Class X, 1	Clearcut	Pj ≥ 70% and Site Class ≥ 1	
PJ2, 3	Jack Pine Site Class 2, 3	Conifer	Pj	Site Class 2, 3	Clearcut	Pj ≥ 70% and Site Class < 1	
SPR	Spruce	Conifer	Sb	All	Clearcut	Sw + Sb ≥ 70%	
MCX 1, 2	Mixed Conifer - Pj	Conifer	Pj	Site Class 1, 1, 2 - Pj WG Site Class X, 1 - Spr WG All Site Classes - Pw WG	Clearcut	Pj + Sw + Sb + Bf + Pw + Pr + Ce + La ≥ 60% where WG = Pj, Sw, Bf, Pw	White Pine WG stands included
MC2, 3	Mixed Conifer - Sb	Conifer	Sb	Site Class 2, 3 - Spr WG Site Class 3 - Pj WG	Clearcut	Pj + Sw + Sb + Bf + Pw + Pr + Ce + La ≥ 60% where WG = Pj, Sw, Bf, Pw, and Ce + La ≤ 50%	
OC	Other Conifer	Conifer	Ce	All Site Classes	Clearcut	Ce + La ≥ 50%	
HDPO	Poplar	Intolerant Hardwood	Po	All Site Classes	Clearcut	Po + Bw + OH ≥ 80% where WG = Po	
HDBW	White Birch	Intolerant Hardwood	Bw	All Site Classes	Clearcut	Po + Bw + OH > 80% where WG = Bw	
MHDPO	Poplar Mixedwood	Mixedwood	Po	All Site Classes	Clearcut	Po + Bw + OH ≥ 50% and ≤ 70% and Po > Bw	
MHDBW	White Birch Mixedwood	Mixedwood	Bw	All Site Classes	Clearuct	Po + Bw + OH ≥ 50% and ≤ 70% and Bw > Po	

Source: 1992-1997 PLF FMP: TMPM, Table 4.11

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Table 2 - DESCRIPTION OF FOREST UNITS - 1997-2001 Pineland Forest FMP

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
PW	White Pine	Conifer	Pw	1 6b, 6c	Clearcut w Seed tre	Pw Working Groups	10-35 Seed trees per hectare
Pj	Jack Pine	Conifer	Pj	1, 2a, 2b, 4	Clearcut	Pj ≥ 70%	
SP	Spruce	Conifer	Sb	1, 4, 5a, 5b, 8, 9, 11, 12, 14	Clearcut	Sw + Sb ≥ 70%	Careful Logging
MC	Mixed Conifer	Conifer	Sb	1, 2a, 2b, 3a, 3b, 4, 5a, 5b, 6a, 6b, 6c, 9, 13	Clearcut	Pj + Sw + Sb + B + Pw + Pr + Ce + L > 60%	WG = Pj, Sw, Sb, B
OC	Other Conifer	Conifer	Ce, L, Oc	9, 13	Clearcut	Ce + L ≥ 50%	Partial cutting of SPF
PO	Poplar	Intolerant Hardwood	Po	7a, 7b, 10, 1	Clearcut	Po + Pb ≥ 70%	
MD	Mixed Dense Hardwood	Mixedwood	Bw	6a, 6c, 7b, 15, 10	Clearcut	Bw + By + Po + Oh ≥ 50% but ≤ 70%	
HD	Dense Hardwood	Intolerant Hardwood	Bw	15, 16	Clearcut	Bw + By + Ms + Mh + A > 70%	Partial cutting of SPF & Veneer
MP	Mixed Poplar	Mixedwood	Po	1 3a, 6a, 6c, 7a, 7b, 10	Clearcut	Po ≥ 50% but ≤ 70%	

Source: 1997-2002 PLF FMP: FMPM(1996), Table FMP-8

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Table 2 - DESCRIPTION OF FOREST UNITS - 2006-2011 Pineland Forest FMP

Forest Unit		Forest Type	Main Working Groups	Site Types	Silvicultural System	FRI Parameters & Criteria	SQL Order	Average Stand Condition	Average Site Class	Average Stocking
Code	Name									
PRWSH	White / Red Pine Shelterwo	Conifer	White Pine (Pw)	45% 20, 22% 21, 10% 13, 9% 5, 8% 9, 3% 7, 1% each 6, 8, 19	Shelterwood	(PW>= 50 And STKG >= 0.7) or (PW>= 50 And SI = "Intnl") or (PW>= 50 And DEVSTAGE = "PREPCUT")	1	Pw 50 Bw 30 Po 10 Sw 10	2.0(2.0)	89%
PRWST	White / Red Pine Seedtree	Conifer	Red Pine (Pr)	53% 20, 18% 21, 12% 19, 9% 6, 5% 8, 3% 4	Clear Cut (Seedtree)	PW + PR + SW + HE >= 40 And PW >= 30 Or (P	2	Pw 38 Bw 22 Sw 19 Bf 10 Ce 9 Sb 1 Po 1	1.4(1.5)	62%
THSH	Tolerant Hardwood Shelterw	Hardwood	Hard/Soft Maple	44% 16, 34% 15, 11% 10, 5% 3, 4% 17, 1% 7 & 8	Shelterwood	(LH + MH + UH >= 30 And not SFT >= 60) or TOL >= 40	3	Oh 24 Bw 23 Yb 17 Sw 10 Po 7 Bf 6 Sb 5 Ce 5 Mh 2 Pw 1	2.3(2.5)	81%
BOG	Bog	Conifer	Black Spruce (Sb)	100% 14	Clear Cut	SB + LA >= 70 And PW = 0 And SC = 4	4	Sb 64 La 34 Ce 2	4.0(4.0)	46%
SB1	Lowland Conifer	Conifer	Black Spruce (Sb)	34% 13, 27% 12, 26% 8, 3% 4, 3% 7, 3% 11, 2% 6, 1% 3	Clear Cut	SB > = 70 And MH + UH + PR = 0 And PW + PJ	5	Sb81 La4 Bw4 Bf3 Ce3 Po2 Pj1 Sw1	1.4(1.5)	67%
PJ1	Pure Jack Pine	Conifer	Jack Pine (Pj)	60%2, 19% 4, 10% 6, 8% 7, 1% each 8, 9, 12	Clear Cut	PJ >= 70 And PO + BW + MH + UH + LH <= 20	6	Pj 82 Sb 9 Po 7 Bw 2	1.4(1.5)	90%
LC1	Lowland Conifer	Conifer	Black Spruce (Sb)	44% 9, 43% 13, 7% 12, 6% 8	Clear Cut	(CE + LA + SB >= 80 And MH + UH + PR = 0 A	7	Ce 41 Sb 35 La 17 Bf 2 Po 2 Bw 2 Pj 1	1.9(2.0)	72%
PJ2	Jack Pine - Spruce	Conifer	Jack Pine (Pj)	50% 4, 25% 6, 11% 2, 9% 3, 2% 13, 1% each 7, 8, 12	Clear Cut	(PJ + SB + PR >= 70 Or (PJ >= 50 And SFT >= 70 And BF + SW + HE + PW + CE + LA <= 20))	8	Pj 55 Sb 22 Po 15 Bw 6 Bf 2 Sw 1	1.6(1.5)	82%
SP1	Spruce - Jack Pine	Conifer	Black Spruce (Sb)	38% 13, 26% 12, 15% 4, 8% 8, 7% 6, 2% 5, 1% each 3, 9 2% many others	Clear Cut	SB + SW + BF + CE + LA + PW + PJ + PR + HE >= 70 And (BF + CE + PW + LA + SW + HE <= 20 Or PJ >= 30)	9	Sb 51 Pj 15 Po 11 Bw 11 Bf 6 Sw 3 Ce 2 La 1	1.1(1.0)	67%
SF1	Spruce Fir	Conifer	Black Spruce (Sb)	27% 13, 24% 6, 23% 9, 9% 7, 7% 12, 4% 3, 3% 8, 1%	Clear Cut	SB + SW + BF + CE + LA + PW + PJ + PR + HE	10	Sb 31 Bf 16 Ce 15 Sw 13 Bw 12 Po 8 Pj 2 Pw 1 La 1	1.2(1.0)	67%
PO1	Poplar	Harwood	Poplar (Po)	76% 7, 21% 6, 2% 3 1% 2	Clear Cut	PO + BW + MH + UH + LH >= 70 And PO >= 50	11	Po 63 Bw 17 Sb 6 Sw 4 Bf 4 Pj 4 Ce 1	1.9(2.0)	84%
BW1	White Birch	Harwood	White Birch (Bw)	67% 7, 28% 3, 4% 6 & 1% many others	Clear Cut	PO + BW + MH + UH + LH >= 70	12	Bw 49 Po 24 Sb 7 Sw 7 Bf 6 Ce 3 Pj 2 Oh 2	2(2.0)	80%
MW1	Mixedwood Jack Pine/Popla	Mixedwood	Poplar (Po)	67% 7, 28% 3, 4% 6 & 1% many others	Clear Cut	PJ + PR >= 20	13	Po 34 Pj 28 Bw 19 Sb 14 Sw 3 Bf 2	1.8(2.0)	82%
MW2	Mixedwood Black Spruce/P	Mixedwood	White Birch (Bw)	45% 7, 21% 3, 12% 6, 7% 13, 5% 9, 4% 12, 3% 8, 1%	Clear Cut	FU=''	14	Bw 30 Po 23 Sb 16 Sw 10 Bf 10 Ce 7 Pj 2 Pw 1 Oh 1	1.8(2.0)	71%

Source: 2006-2011 PLF FMP FMPM(1996), Table FMP-8

4.0 Summary of Planned & Actual Harvest Volume

Table 3 and the corresponding graph summarizes planned and actual harvest volumes for the three planning periods (i.e. 1992-1997, 1997-2001, & 2006-2011). "Actual" annualized volumes represent averages that have been calculated from annual report data for each plan term. The 2001-2006 PMF volumes have been incorporated into this table for illustrative purposes only.

Historically, the primary supply objective for the Pineland Forest has been to supply the Timmins and Ostrom sawmills with spruce-pine-fir (SPF) timber. With the recent expansion of the oriented strandboard (OSB) industry and the poplar veneer industry, the poplar supply on the PLF has become increasingly important to those mills sourcing fibre from the forest. Markets for other species and specialty products such as hardwood sawlogs, and veneer, cedar sawlogs and shingle material and white pine sawlogs have always been vigorously pursued, with varying degrees of success. Recently however, with the downturn in the OSB market and the closing of a local white pine sawmill demand for these species is showing a negative decreasing trend.

Actual harvest volumes for the last two complete plan terms on the Pineland Forest (i.e. 1992-1997 & 1997-2001) have been on average 4 to 23 percent less respectively, than planned due to bypass of low volume and in a few cases inoperable stands. Actual total harvest volume per hectare during the 1992-1997 period was 15% higher than the planned volume per hectare. For the 1997-2001 plan period actual total harvest volume per hectare was within 1% of the planned volume per hectare. Planned SPF volume per hectare for the 1992-1997 period averaged 78 m3/ha compared to the planned volume of 77 m3/ha. For the 1997-2001 plan period planned SPF volume per hectare averaged 67 m3/ha compared to the planned volume of 64 m^3/ha. Planned annual SPF volume during the 1992 TMP was 88.4% of planned and 76% for the 1997 FMP.

Planned poplar volume has increased substantially since 1992 primarily due to increased demand for OSB grade and veneer quality aspen. This increase in demand lead to the signing of long-term hardwood supply agreements with the OSB and veneer users under the Northeast Region Supply Initiative (1998 & 1999). Recently (i.e. 2004) the MNR developed revised supply agreements for the OSB facilities in Timmins, Englehart and Limer for non-veneer quality aspen and white birch. The revised target volumes developed for the Pineland Forest were incorporated into the 2006-2026 PLF FMP. Since the signing of the first supply agreements, all marketable aspen volume has been committed to local hardwood industries.

Actual poplar harvest volume for the 1992-1997 period was nearly double that planned due to the expanding demand for aspen at the time. Actual harvest volume for the 1997-2001 period was however, 17% less than planned due to the bypass of low volume and inoperable stands. Although data for the first year of operations on the Pineland Forest under the 2006-2011 FMP is not available, this decreasing trend in aspen utilization is anticipated due to a labour disruption at the Timmins OSB facility, which commenced in October 2006.

Demand for which birch consists of sawlog and veneer grade material. For the 1997-2001FMP period, planned volume included some OSB grade white birch in anticipation of demand for this material, which never materialized. This accounts for the fact that only

3.9% of the planned white birch volume was actually utilized. The revised non-veneer quality white birch volume targets developed by MNR in 2004, were in incorporated into the 2006-2026 PLF FMP.

Demand for other conifer (i.e. cedar and larch) began to develop over the 1997-2001 plan period with the start-up of a few local facilities capable of processing primarily cedar into a number of products. Since the 1997 FMP, demand for cedar timber from the Pineland Forest has increased as additional local and out of province markets have developed. As a result of the increasing demand for cedar from the PLF the 2006-2026 FMP, included an estimate of cedar volume to be utilized during the plan period.

The planned white pine harvest volume has fluctuated over the last two complete plan terms for the Pineland Forest (i.e. 1992-1997 & 1997-2001), as a result of increased management intensity. The creation of a white pine forest unit for the 1997 FMP positively impacted planned volume by increasing the allocated area of white pine stands from previous plan terms. The introduction of shelterwood management in the 2001-2021 PMF FMP and creation of two white and red pine forest units (i.e. PRWST, PRWSH), in the 2006-2026 PLF FMP has resulted in a reduction in the volume available form allocated stands managed under the shelterwood silvicultural system. Actual harvested volumes have been less than planned primarily due to the bypass of incidental white pine in mixedwood stands where a second pass operation would be uneconomical. In addition to this the major market for white pine for the PLF ceased operation in 2005. The maintenance of seed trees for regeneration purposes in the white pine forest units has also contributed to the reduced harvest.

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Table 3 - Summary of Planned & Actual Harvest Volumes

Average Planned Annual Harvest Volumes

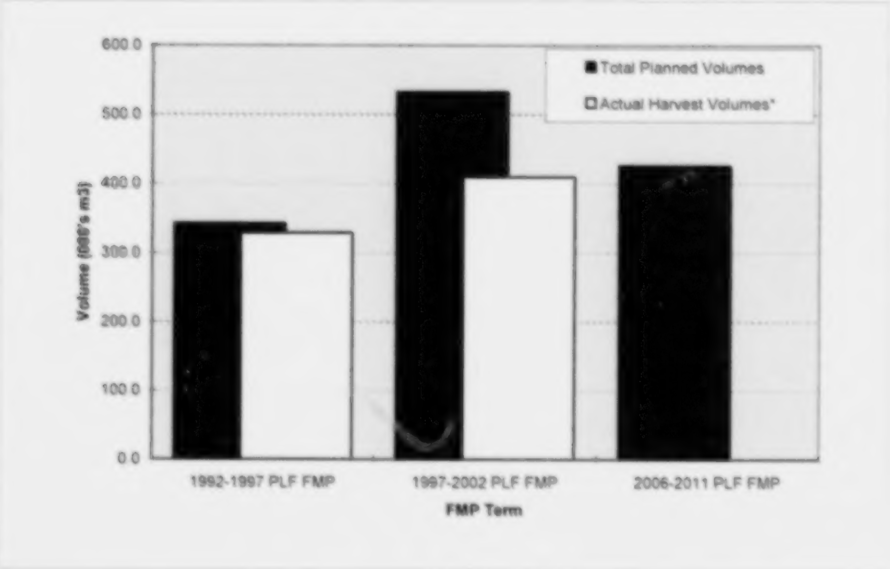
Volumes are Annualized for the indicated 5 year period

	Volume in '000's cubic metres			
	Past Plan Terms			Current Plan
Species	1992-1997 PLF	1997-2001 PLF	2001-2006 PMF	2006-2011 PLF
Pj	129.6	88.2	113.6	60.8
Sp	160.8	194.7	300.4	154.7
Bf	-	-	16.8	10.1
Pw/Pr	5.6	10.4	4.4	1.2
Oc	-	-	43.4	39.0
Po	44.6	203.2	245.0	111.0
Bw	1.0	35.6	2.5	46.4
Othr Hwd	-	-	-	2.7
Total Planned Volumes	**342.2**	**532.1**	**726.1**	**425.9**

Actual Harvest Volumes

Volumes are Annualized for the indicated 5 year period

	Volume in '000's cubic metres			
	Past Plan Terms			Current Plan
Species	1992-1997 PLF	1997-2001 PLF	2001-2006 PMF	2006-2011 PLF
Pj	123.9	62.0	140.0	
Sp	121.6	171.0	188.1	
Bf	-	-	19.6	
Pw/Pr	1.5	3.1	0.1	
Oc	-	2.9	4.2	
Po	80.4	169.2	156.8	
Bw	1.1	1.4	8.4	
Othr Hwd	-	-	0.0	
Total Actual Volumes	**328.5**	**409.6**	**517.2**	



Source: 1992-1997 PLF FMP: 2002 PLF IFA Trend Analysis, Table 3
1997-2002 PLF FMP: 2002 PLF IFA Trend Analysis, Table 3
2001-2006 PMF FMP: FMPM(1996), Table FMP-23 & 2005-2006 Annual Report Table AR-4. (Provided for illustrative purposes only
2006-2011 PLF FMP: FMPM(1996), Table FMP-23.

5.0 Summary of Planned & Actual Depletion Area

Table 4 and the accompanying graph compare the annual planned depletion area to the actual depletion area. Planned annual harvested area as a percentage of the total production forest has remained relatively stable over the last four planning periods, ranging from 1.2% to 1.4%.

With the 1997 PLF FMP, a shift from harvesting predominately jack pine dominated forest units to spruce dominated forest units applying an allocation strategy for SPF supply first implemented in 1982 was initiated. This strategy was developed to deal with a landbase having an abundance of over-mature jack pine and spruce stands. Under this strategy harvest allocations initially targeted jack pine dominated stands in order to capture this volume prior to excessive natural mortality while "storing" the longer-live spruce dominated stands for later harvest. The result of implementing this strategy on the PLF is evident in the planned harvest area forecast in the 2006-2026 FMP, where the harvest of jack pine forest units has decreased significantly, offset partially by an increase in the area of spruce dominated forest units forecast to be depleted.

Over the first two complete plan terms for the Pineland Forest (i.e. 1992-1997 & 1997-2001) the percentage of the planned harvest that was actually harvested decreased slightly from 83.6% to 77.7%. This slight decrease is the result of an increase in the bypassing of low volume and in a few cases inoperable stands during the 1997 FMP. For comparison purposes the percentage of the planned harvest area that was actually harvested during the 2001-2006 PMF FMP was 78.7%.

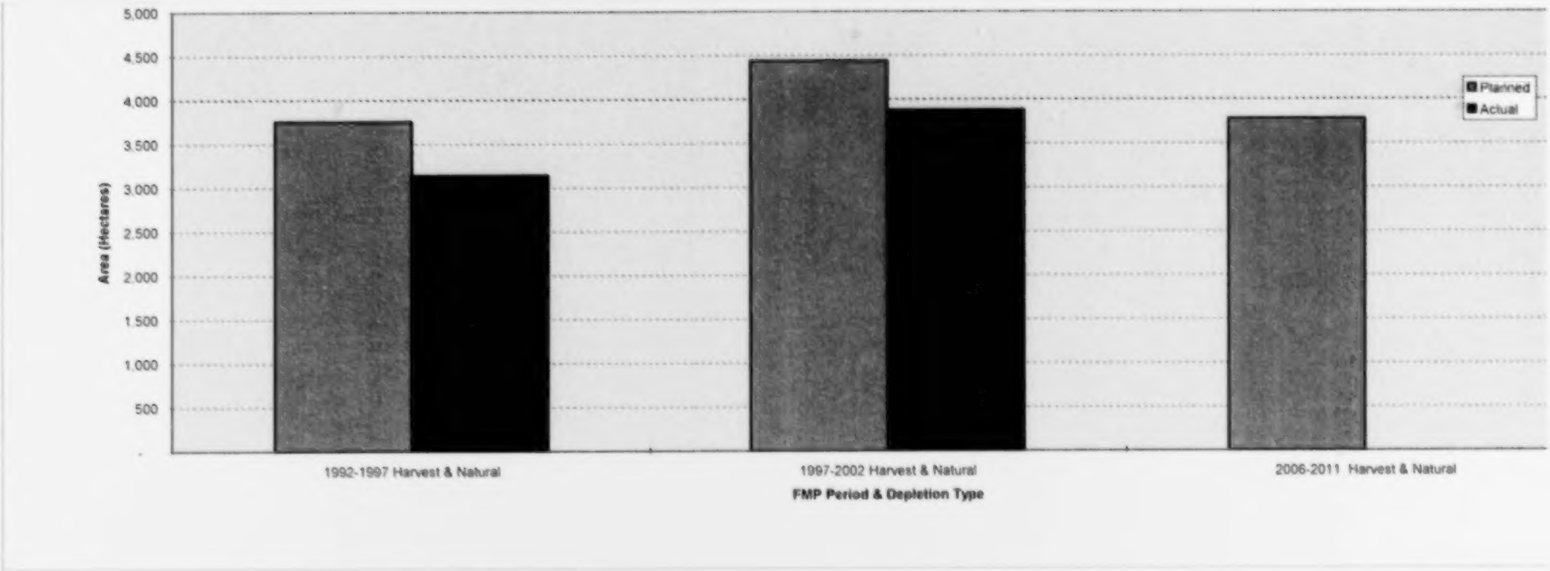
During the 1992-1997 TMP approximately 84.5% of the planned SPF volume was obtained from 88.4% or the planned area. During the 1997-2001 FMP period, approximately 82.4% of the planned SPF volume was obtained from 76% of the planned area. Poplar utilization during the 1992 TMP was 180% of planned. This volume was obtained from approximately 73.9% of the area. The reason for the large difference between actual volume and actual area harvested is attributed to the fact that the demand for poplar during this term increased over and above what was forecast to be utilized. During the 1997 FMP period approximately 83.2% of the planned volume was obtained from 89.7% or the planned area.

Table 4 - Summary of Planned & Actual Depletion Area
Past and Current Plans

Area is Annualized for the indicated 5 year period

Forest Units	Planned Annual Harvest Area				Actual Depletion Area							
	Area in hectares				*Area in hectares*							
	Past Plans			Current Plan	Past Plans						Current Plan	
	1992-1997 PLF	1997-2002 PLF	2001-2006 PMF	2006-2011 PLF	1992-1997 PLF		1997-2002 PLF		2001-2006 PMF		2006-2011 PLF	
	Harvest	Harvest	Harvest	Harvest	Harvest	Natural	Harvest	Natural	Harvest	Natural	Harvest	Natural
Pj (Pj1, Pj2)	336	429	851	289	323	-	277	102	655	1	N/A	N/A
Sp (Sb1)	753	576	1,222	415	682	-	428	74	570	1	N/A	N/A
Pwr (PRWST, PRWSH)	-	37	33	4	-	-	32	1	-	-	N/A	N/A
Oc (Lc1)	101	374	1,249	878	55	-	262	7	843	3	N/A	N/A
Po (Po1)	495	378	1,107	410	366	-	339	22	964	2	N/A	N/A
Bw (Bw1)	263	126	571	285	223	-	80	1	476	6	N/A	N/A
MXCON (Mw1, Sf1, Sp1)	932	982	849	938	781	-	806	98	1,122	7	N/A	N/A
MXHD (Mw2)	876	1,536	998	516	711	-	1,227	123	793	7	N/A	N/A
TOL Hwd (THSH)	-	-	17	42	-	-	-	-	11	-	N/A	N/A
Total Area	3,756	4,438	6,897	3,774	3,141	-	3,451	428	5,433	27	N/A	N/A

Planned vs. Actual Harvest Area



Source:

1992-1997 PLF FMP: 2002 PLF IFA Trend Analysis Table 4
1997-2002 PLF FMP: 2002 PLF IFA Trend Analysis Table 4
2001-2006 PMF FMP: 2002 PMF IFA Trend Analysis Table 4 & 2006-2006 PMF AR, Table AR-1 & AR-6
2006-2011 PLF FMP: FMPM(1996) Table FMP-18

6.0 Summary of Managed Productive Forest by Forest Unit

Table 5 summarizes the area of managed productive forest by forest unit on the Pineland Forest for the 1992-1997, 1997-2001 and 2006-2011 FMP terms.

It is difficult to compare and track forest unit transitions between the three plans since the forest units have changed with each plan. Change in forest unit definitions was compounded by a new inventory received in 1995. In addition the total area of the Pineland Forest has changed with each of the three plans.

The 1997 FMP has a landscape level ecosystem management objective to maintain all existing forest cover types within the landscape of the Pineland Forest. Under this objective the target was to maintain the relative proportion of each forest unit within the range of what might have occurred in a natural forest (i.e. within the bounds of natural variation). The target was set at maintaining a minimum of 75% of the 1997 area of each forest unit over time. A similar cover type objective has been established in the 2006 PLF FMP to maintain the area of forest cover types that would occur naturally on the PLF above the lower bound of natural variation. With the implementation of standard forest units, tracking changes in forest units should be much easier in the future.

The best way to compare the area of managed productive forest by forest unit over the three planning periods (i.e. 1992-1997, 1997-2001 and 2006-2011) is to consider the relative proportion of similar types on the forest as a percentage of the total managed productive forest. To enable this comparison, the forest units from each plan have been "rolled-up" into similar forest unit groups (Refer to table below). Caution should be used when interpreting this table because two different forest inventories are represented by the two earlier plan periods.

Fu Grouping	1992-1997 TMP	1997-2001 FMP	2006-2011 FMP	% Change from 1992
Pj	8%	10.9%	13.0%	+5.0%
Sp	15%	15.7%	11.6%	-3.4%
Pw/Pr	0%	0.3%	0.4%	+0.4%
Oc	5%	10.0%	9.4%	+4.4%
Po	11%	6.1%	11.8%	+0.8%
Bw	9%	3.4%	9.6%	+0.6%
Mxcon	24%	31.4%	23.7%	-0.4%
Mxhd	28%	22.2%	20.0%	-8.0%
Tol Hwd.	0%	0%	0.5%	+0.5%

As illustrated above the proportion of the pure forest units has remained relatively stable since 1992 with the exception of the pure jack pine and pure spruce forest unit groups. The pure jack pine forest unit group has increased since 1992, possibly due to the management direction to increase the area associated with the jack pine working groups, first implemented during the 1997 FMP period. The decline in the pure spruce forest unit group is likely the result of area being typed as pure spruce in the 1973 inventory, and re-typed as other conifer or mixed conifer in the 1995 inventory. This is illustrated above with the increase in the other conifer forest unit group from the 1992 TMP. Another significant change highlighted in the table above has occurred in the mixed hardwood forest unit group, which has declined in relative proportion by approximately 8% since 1992. This could be the result of conversion to pure hardwood or to conifer dominated (i.e. Pj) plantations. The creation of a tolerant hardwood forest unit in 2001 and 2006 PLF FMP would have also drawn some area from the mixed hardwood group.

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Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT 1992-1997 PLF TMP

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m)	Unavailable		Stage of Management	Available	
				(ha)	(m)		(ha)	(m)
PjX1	B&S						6,135	
	1-20						6,173	
	21-40						22	
	41-60						168	
	61-80						396	
	81-100						5,026	
	101-120						552	
	121-140						40	
	141 +						92	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**18,604**	**0**
Pj2,3	B&S						817	
	1-20						1,291	
	21-40						380	
	41-60						1,296	
	61-80						1,169	
	81-100						2,391	
	101-120						79	
	121-140						0	
	141 +						16	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**7,439**	**0**
SP1	B&S						7,524	
	1-20						3,110	
	21-40						0	
	41-60						884	
	61-80						3,046	
	81-100						6,779	
	101-120						11,223	
	121-140						2,583	
	141 +						13,637	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**48,786**	**0**
MCX,1	B&S						7,738	
	1-20						3,216	
	21-40						545	
	41-60						8,691	
	61-80						5,123	
	81-100						8,763	
	101-120						4,782	
	121-140						1,390	
	141 +						4,935	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**45,183**	**0**
MC2, 3	B&S						11,005	
	1-20						6,580	
	21-40						75	
	41-60						1,274	
	61-80						1,236	
	81-100						2,054	
	101-120						5,555	
	121-140						692	
	141 +						4,048	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**32,519**	**0**
MHDPo	B&S						9,605	
	1-20						5,488	
	21-40						131	
	41-60						1,405	
	61-80						3,496	
	81-100						13,314	
	101-120						4,790	
	121-140						294	
	141 +						1,323	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**39,846**	**0**

Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m)	Unavailable		Stage of Management	Available	
				(ha)	(m)		(ha)	(m)
MHDBw	B&S						13,429	
	1-20						5,975	
	21-40						325	
	41-60						8,294	
	61-80						5,690	
	81-100						9,822	
	101-120						9,598	
	121-140						181	
	141 +						667	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**53,981**	**0**
OC	B&S						1,380	
	1-20						1,470	
	21-40						0	
	41-60						6	
	61-80						201	
	81-100						1,044	
	101-120						2,212	
	121-140						1,335	
	141 +						7,361	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**15,009**	**0**
HDPo	B&S						4,529	
	1-20						4,520	
	21-40						275	
	41-60						1,616	
	61-80						6,317	
	81-100						11,852	
	101-120						5,691	
	121-140						20	
	141 +						47	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**34,867**	**0**
HDBw	B&S						5,581	
	1-20						2,430	
	21-40						600	
	41-60						2,753	
	61-80						5,193	
	81-100						8,266	
	101-120						2,244	
	121-140						555	
	141 +						87	
	Subtotal	**0**	**0**	**0**	**0**	**0**	**27,709**	**0**
	Grand Total	0	0	0	0	0	**323,943**	0

Source: 1992-1997 PLF FMP 2002 PLF IFA Trend Analysis Table 5

Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT 1997-2001 PLF FMP

Forest Unit	Age Class	Protection Forest		Production Forest			
				Unavailable		Available	
		(ha)	(m^3)	(ha)	(m^3)	(ha)	(m^3)
MP	1-10			101		1,011	
	11-20			113		1,424	
	21-30			140		1,629	
	31-40			179	7,464	2,464	102,749
	41-50			186	15,857	2,015	171,779
	51-60	12	1,462	209	26,209	2,220	278,388
	61-70			449	69,371	3,583	553,574
	71-80	5	837	893	149,220	5,602	936,094
	81-90	16	2,749	767	129,009	4,115	692,143
	91-100			678	108,073	3,601	573,999
	101-110			263	33,533	2,705	344,888
	Subtotal	**33**	**5,048**	**3,978**	**538,736**	**30,369**	**3,653,614**
OC	1-10			167		1,846	
	11-20			7		78	
	21-30					65	
	31-40			11	83	111	838
	41-50			8	153	161	3,075
	51-60	37	770	34	1,209	289	10,274
	61-70	201	7,196	133	7,282	1,255	68,711
	71-80	53	2,769	270	19,994	2,088	154,616
	81-90	22	1,504	227	20,827	2,004	183,867
	91-100	37	3,065	667	71,169	3,553	379,105
	101-110	14	1,335	433	51,397	2,617	310,638
	11-120	102	10,781	707	90,355	4,452	568,966
	121-130	17	1,938	650	87,360	4,867	654,125
	131-140			150	20,790	2,123	294,248
	141-150			173	24,341	1,293	181,925
	151-160			290		2,372	
	Subtotal	**483**	**29,358**	**3,927**	**394,960**	**29,174**	**2,810,388**
HD	1-10			232		4,935	
	11-20						
	21-30					9	
	31-40	59	1,407	4	104	163	4,238
	41-50			103	5,886	994	56,807
	51-60			87	7,539	764	66,201
	61-70			47	5,100	331	35,914
	71-80			71	8,634	988	120,141
	81-90			116	14,616	842	106,092
	91-100			35	4,389	625	78,375
	101-110					70	8,400
	11-120					9	1,011
	121-130			11		50	
	131-140					31	
	Subtotal	**59**	**1,407**	**706**	**46,268**	**9,811**	**477,179**
PW	1-10			9		113	
	11-20						
	21-30						
	31-40					8	241
	41-50			2	121	9	545
	51-60					28	2,576
	61-70						
	71-80						
	81-90					0	
	91-100					6	1,013
	101-110						
	111-120			6	1,060	14	2,474
	121-130			1	176	15	2,643
	131-140			32	5,501	318	54,664
	141-150					162	27,086
	151-160			21	3,499	196	32,654
	161-170			19	3,154	111	18,426
	Subtotal	**0**	**0**	**90**	**13,511**	**980**	**142,322**

Forest Unit	Age Class	Protection Forest		Production Forest			
		(ha)	(m^3)	Unavailable		Stage of Management	Available
				(ha)	(m^3)		(ha)
MD	1-10	14		155		1,152	
	11-20			164		2,061	
	21-30			115		1,403	
	31-40			320	9,104	3,560	101,282
	41-50	20	1,195	1,252	74,807	10,838	647,571
	51-60	26	2,321	1,011	90,232	7,477	667,322
	61-70	15	1,674	838	93,521	6,517	727,297
	71-80	56	6,938	1,226	151,901	7,833	970,509
	81-90			786	100,136	6,506	828,864
	91-100			1,412	176,218	13,915	1,736,592
	101-110			385	43,197	2,462	276,236
	11-120			38	3,659	448	43,142
	121-130			36		342	
	131-140					8	
	Subtotal	**131**	**12,128**	**7,738**	**742,775**	**64,522**	**5,998,815**
PO	1-10			416		6,575	
	11-20			78		1,154	
	21-30			28		514	
	31-40			37	2,033	1,088	59,786
	41-50			49	5,478	284	31,751
	51-60			33	5,396	329	53,792
	61-70	13	2,157	283	56,543	1,742	348,052
	71-80			370	78,662	2,496	530,650
	81-90			291	61,634	1,577	334,009
	91-100			298	58,676	1,297	255,379
	101-110			171	24,863	817	118,792
	Subtotal	**13**	**2,157**	**2,054**	**293,285**	**17,873**	**1,732,211**
MC	1-10			241		3,078	
	11-20			293		3,695	11,788
	21-30			126		1,990	
	31-40			401	8,341	4,017	83,554
	41-50			610	26,352	3,674	158,717
	51-60			838	55,140	5,475	360,255
	61-70			1,372	116,894	6,660	567,432
	71-80	12	544	1,635	162,274	7,891	783,182
	81-90	8	449	1,348	144,371	5,476	586,480
	91-100			1,567	172,997	7,798	860,899
	101-110	15	1,096	732	80,008	3,669	401,022
	11-120			614	64,716	3,220	339,388
	121-130	17	1,429	531	52,702	2,433	241,475
	131-140			156	13,666	1,204	105,470
	141-150			17	1,297	72	5,494
	151-160			143	10,725	1,011	75,825
	Subtotal	**52**	**3,518**	**10,624**	**909,483**	**61,363**	**4,580,981**
SP	1-10	9		990		16,488	
	11-20			59		2,746	10,984
	21-30			65		773	
	31-40			104	983	834	7,881
	41-50			102	2,213	609	13,215
	51-60			152	5,723	1,265	47,627
	61-70	48	1,267	378	20,790	3,211	176,605
	71-80	86	3,363	731	52,669	5,338	384,603
	81-90	17	878	396	34,492	2,262	197,020
	91-100	176	11,132	432	43,114	3,049	304,290
	101-110	33	2,417	277	30,359	1,559	170,866
	11-120	52	4,235	285	33,203	2,407	280,416
	121-130	21	1,849	362	43,874	2,385	289,062
	131-140	14	1,307	240	29,808	1,670	207,414
	141-150			43	5,409	369	46,420
	151-160	4	380	90	11,250	844	105,500
	Subtotal	**460**	**26,828**	**4,706**	**313,887**	**45,809**	**2,241,903**

Forest Unit	Age Class	Protection Forest		Production Forest			
				Unavailable		Stage of Management	Available
		(ha)	(m³)	(ha)	(m³)		(ha)
PJ	1-10			1,010		12,290	
	11-20	16		487		9,817	166,889
	21-30			101		1,665	
	31-40			153	8,805	1,397	80,397
	41-50			124	13,566	831	90,911
	51-60			23	3,512	138	21,073
	61-70			149	27,178	1,288	234,931
	71-80			311	61,858	1,547	307,698
	81-90	6	1,261	336	67,771	1,061	214,004
	91-100			632	125,136	1,644	325,512
	101-110			84	15,826	317	59,723
	Subtotal	**22**	**1,261**	**3,410**	**323,652**	**31,995**	**1,501,138**
	Grand Total	**1,253**	**81,705**	**37,233**	**3,576,557**	**291,896**	**23,138,551**

Source: 1992-1997 PLF FMP. 2002 PLF IFA Trend Analysis Table 5

Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT 2001-2006 PMF FMP

Forest Unit	Age Class	Protection Forest (ha)	Protection Forest (m^3)	Production Forest Unavailable (ha)	Production Forest Unavailable (m^3)	Production Forest Stage of Management	Production Forest Available (ha)	Production Forest Available (m^3)
BOG	1-20	40	12	0	0		0	0
	21-40	5	84	0	0		0	0
	41-60	4	42	0	0		0	0
	61-80	286	0	0	0		0	0
	81-100	320	0	0	0		0	0
	101-120	108	195	0	0		0	0
	121-140	66	0	0	0		0	0
	141-160	122	0	0	0		0	0
	Subtotal	**951**	**333**	**0**	**0**		**0**	**0**
BW1	B&S	0	0	0	0		2,410	0
	43831	0	0	285	0		4,996	0
	21-40	0	0	71	1,349		1,508	28,652
	41-60	154	10,164	1,027	67,782		9,685	639,210
	61-80	0	0	608	59,584		6,299	617,302
	81-100	0	0	934	110,212		10,660	1,257,880
	101-120	0	0	4	480		296	35,520
	121-140	0	0	1	79		45	3,555
	Subtotal	**154**	**10,164**	**2,930**	**239,486**		**35,899**	**2,582,119**
LC1	B&S	0	0	0	0		1,001	0
	43831	4	0	323	0		6,090	0
	21-40	3	3	140	140		1,620	1,620
	41-60	34	204	163	978		1,745	10,470
	61-80	0	0	562	19,670		3,777	132,195
	81-100	81	5,751	1,347	95,637		9,957	706,947
	101-120	152	13,984	1,668	153,456		11,268	1,036,656
	121-140	19	1,729	1,693	154,063		13,241	1,204,931
	141-160	0	0	665	54,530		6,258	513,156
	161-180	0	0	0	0		0	0
	181-200	0	0	6	390		0	0
	Subtotal	**293**	**21,671**	**6,567**	**478,864**		**54,957**	**3,605,975**
MW1	B&S	0	0	0	0			0
	43831	14	0	250	0		3,476	0
	21-40	0	0	260	10,660		4,113	168,633
	41-60	0	0	654	68,670		6,642	697,410
	61-80	6	888	572	84,656		3,416	505,568
	81-100	0	0	1,173	198,237		5,290	894,010
	101-120	0	0	324	52,812		870	141,810
	121-140	0	0	11	902		29	2,378
	Subtotal	**20**	**888**	**3,244**	**415,937**		**23,836**	**2,409,809**
MW2	B&S	0	0	0	0		4	0
	43831	0	0	570	0		12,146	0
	21-40	0	0	495	9,900		8,112	162,240
	41-60	64	3,840	2,044	122,640		20,828	1,249,680
	61-80	209	20,064	1,992	191,232		14,541	1,395,936
	81-100	119	14,280	2,518	302,160		22,454	2,694,480
	101-120	0	0	731	92,106		7,087	892,962
	121-140	0	0	140	12,040		1,372	117,992
	141-160	14	770	18	990		213	11,715
	Subtotal	**406**	**38,954**	**8,508**	**731,068**		**86,757**	**6,525,005**
PJ1	B&S	0	0	0	0		154	0
	43831	37	0	1,605	0		28,133	0
	21-40	0	0	290	18,850	Com. Thin	3,648	237,120
	41-60	0	0	622	89,568	Com. Thin	4,580	659,520
	61-80	0	0	268	50,116		1,486	277,882
	81-100	28	5,684	938	190,414		2,347	476,441
	101-120	0	0	221	41,548		485	91,180
	Subtotal	**65**	**5,684**	**3,944**	**390,496**		**40,833**	**1,742,143**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Management	Available	
		(ha)	(m³)	(ha)	(m³)		(ha)	(m³)
PJ2	B&S	0	0	0	0			0
	43831	0	0	211	0		3,733	0
	21-40	0	0	172	8,600	Com. Thin	1,674	83,700
	41-60	0	0	389	45,902	Com. Thin	2,741	323,438
	61-80	0	0	578	93,636		2,809	455,058
	81-100	0	0	888	160,728		3,709	671,329
	101-120	0	0	318	55,014		1,329	229,917
	121-140	0	0	6	564		46	4,324
	Subtotal	**0**	**0**	**2,562**	**364,444**		**16,041**	**1,767,766**
PO1	B&S	0	0	0	0		2,772	0
	43831	51	0	684	0		11,401	0
	21-40	6	210	314	10,990		5,987	209,545
	41-60	12	1,152	757	72,672		8,821	846,816
	61-80	84	11,676	1,221	169,719		9,566	1,329,674
	81-100	42	6,804	2,192	355,104		15,617	2,529,954
	101-120	0	0	640	99,200		5,104	791,120
	121-140	0	0	5	330		112	7,392
	Subtotal	**195**	**19,842**	**5,813**	**708,015**		**59,380**	**5,714,501**
PW2	B&S	0	0	0	0		19	0
	43831	0	0	2	0		378	0
	21-40	0	0	0	0		37	796
	41-60	0	0	2	148		36	2,664
	61-80	0	0	3	359		22	2,629
	81-100	0	0	9	1,337		80	11,880
	101-120	0	0	2	317		9	1,427
	121-140	0	0	4	814		164	33,374
	141-160	0	0	20	2,520		111	13,986
	161-180	0	0	3	365		60	7,290
	181-200	0	0	13	1,573		74	8,954
	Subtotal	**0**	**0**	**58**	**7,432**		**990**	**82,999**
PW1	B&S	0	0	0	0			0
	43831	0	0	0	0			0
	21-40	0	0	0	0			0
	41-60	0	0	0	0			0
	61-80	0	0	0	0	Regen Cut		0
	81-100	0	0	0	0	Regen Cut		0
	101-120	0	0	6	1,215	Regen Cut	8	1,620
	121-140	0	0	25	4,863	Regen Cut	17	3,307
	141-160	0	0	20	3,720	Regen Cut	264	49,104
	161-180	0	0	3	543	Regen Cut	61	11,041
	181-200	0	0	0	0	Regen Cut	7	1,257
	Subtotal	**0**	**0**	**54**	**10,341**		**357**	**66,328**
SB1	B&S	0	0	0	0		8,628	0
	43831	0	0	1,289	0		17,764	0
	21-40	0	0	116	580		1,412	7,060
	41-60	0	0	168	4,704		1,427	39,956
	61-80	0	0	483	30,429		5,162	325,206
	81-100	0	0	813	81,300		5,354	535,400
	101-120	0	0	477	59,625		4,017	502,125
	121-140	0	0	535	69,015		3,453	445,437
	141-160	0	0	173	20,760		993	119,160
	Subtotal	**0**	**0**	**4,054**	**266,413**		**48,210**	**1,974,344**
SF1	B&S	0	0	0	0		484	0
	43831	0	0	541	0		17,315	0
	21-40	0	0	364	5,096		3,981	55,734
	41-60	0	0	438	25,404		3,196	185,368
	61-80	6	576	627	60,192		3,765	361,440
	81-100	0	0	986	121,278		5,330	655,590
	101-120	14	1,848	739	97,548		3,736	493,152
	121-140	23	2,530	604	66,440		3,319	365,090
	141-160	0	0	236	20,768		1,118	98,384
	161-180	0	0	7	560		45	3,600
	181-200	0	0	0	0		0	0
	201-220	0	0	0	0		66	4,158
	Subtotal	**43**	**4,954**	**4,542**	**397,286**		**42,355**	**2,222,516**

Forest	Age	Protection Forest		Production Forest				
				Unavailable		Stage of	Available	
Unit	Class	(ha)	(m^3)	(ha)	(m^3)	Management	(ha)	(m^3)
SP1	B&S	0	0	0	0		27	0
	43831	0	0	175	0		3,520	0
	21-40	0	0	256	5,120		2,398	47,960
	41-60	0	0	438	29,346		4,304	288,368
	61-80	0	0	734	78,538		4,689	501,723
	81-100	0	0	1,395	186,930		7,596	1,017,864
	101-120	0	0	835	120,240		4,483	645,552
	121-140	5	585	163	19,071		1,306	152,802
	141-160	0	0	107	9,737		449	40,859
	Subtotal	**5**	**585**	**4,103**	**448,982**		**28,772**	**2,695,128**
OH1	B&S	0	0	0	0		0	0
	43831	0	0	0	0		88	0
	21-40	0	0	4	28		9	63
	41-60	0	0	33	1,386		276	11,592
	61-80	0	0	17	1,445		474	40,290
	81-100	0	0	30	3,570		517	61,523
	101-120	0	0	9	1,233		118	16,166
	121-140	0	0	6	726		79	9,559
	141-160	0	0	0	0		31	3,100
	Subtotal	**0**	**0**	**99**	**8,388**		**1,592**	**142,293**
	Grand Total	2,132	103,075	46,478	4,467,151		439,979	31,530,926

Source: 2006-2011 PLF FMP FMPM(1996), Table FMP-9
2002 PMF IFA Trend Analysis Table 5

Table 5 - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT 2006-2011 PLF FMP

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Bog	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	0	0	n/a	0	0
	11-20	0	0	0	0	n/a	0	0
	21-30	0	0	0	0	n/a	0	0
	31-40	0	0	0	0	n/a	0	0
	41-50	0	0	0	0	n/a	0	0
	51-60	0	0	0	0	n/a	0	0
	61-70	4	0	0	0	n/a	0	0
	71-80	249	0	0	0	n/a	0	0
	81-90	133	0	0	0	n/a	0	0
	91-100	25	0	0	0	n/a	0	0
	101-110	183	0	0	0	n/a	0	0
	111-120	32	0	0	0	n/a	0	0
	121-130	66	0	0	0	n/a	0	0
	131-140	16	0	0	0	n/a	0	0
	141-150	14	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	5	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**726**	**0**	**0**	**0**		**0**	**0**
Bw1	b&s	0	0	0	0	n/a	1,096	0
	1-10	0	0	67	0	n/a	2,565	0
	11-20	0	0	251	0	n/a	1,514	0
	21-30	0	0	46	364	n/a	419	3,351
	31-40	0	0	48	1,484	n/a	352	10,910
	41-50	59	3,262	153	8,414	n/a	1,133	62,297
	51-60	10	727	450	32,381	n/a	4,520	325,427
	61-70	0	0	378	35,167	n/a	2,782	258,680
	71-80	0	0	227	24,333	n/a	2,344	250,859
	81-90	0	0	392	45,841	n/a	2,848	333,244
	91-100	0	0	271	33,118	n/a	2,278	277,971
	101-110	0	0	498	61,266	n/a	4,163	512,008
	111-120	0	0	36	3,995	n/a	371	40,810
	121-130	0	0	0	0	n/a	0	0
	131-140	0	0	0	0	n/a	0	0
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**69**	**3,989**	**2,817**	**246,362**		**26,384**	**2,075,557**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
LC1	b&s	0	0	0	0	n/a	324	0
	1-10	0	0	98	0	n/a	2,951	0
	11-20	0	0	152	0	n/a	905	0
	21-30	0	0	24	0	n/a	316	0
	31-40	0	0	7	7	n/a	268	268
	41-50	0	0	22	109	n/a	334	1,672
	51-60	0	0	33	295	n/a	305	2,741
	61-70	33	1,029	39	1,218	n/a	365	11,317
	71-80	0	0	166	8,949	n/a	1,083	58,506
	81-90	16	1,127	362	25,374	n/a	2,210	154,676
	91-100	22	1,859	183	15,194	n/a	1,712	142,131
	101-110	21	1,822	566	49,804	n/a	3,062	269,490
	111-120	21	1,768	263	22,352	n/a	1,939	164,790
	121-130	71	5,711	591	47,875	n/a	2,968	240,425
	131-140	0	0	507	37,014	n/a	2,809	205,089
	141-150	0	0	187	12,876	n/a	1,499	103,437
	151-160	0	0	101	6,361	n/a	857	54,011
	161-170	0	0	212	12,704	n/a	2,147	128,835
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**184**	**13,316**	**3,512**	**240,130**		**26,056**	**1,537,387**
Mw1	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	40	0	n/a	1,250	0
	11-20	0	0	178	0	n/a	2,166	0
	21-30	0	0	77	1,072	n/a	879	12,304
	31-40	0	0	66	2,715	n/a	476	19,527
	41-50	0	0	67	4,581	n/a	353	23,971
	51-60	0	0	120	10,797	n/a	767	69,053
	61-70	0	0	66	7,411	n/a	1,062	120,060
	71-80	0	0	191	25,016	n/a	1,201	157,395
	81-90	0	0	305	43,561	n/a	1,237	176,927
	91-100	0	0	456	67,958	n/a	1,788	266,440
	101-110	0	0	396	59,392	n/a	1,043	156,468
	111-120	0	0	83	10,611	n/a	244	31,269
	121-130	0	0	18	1,562	n/a	27	2,366
	131-140	0	0	3	114	n/a	4	172
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**2,065**	**234,790**		**12,499**	**1,035,954**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Mw2	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	80	0	n/a	3,598	0
	11-20	0	0	444	0	n/a	8,792	0
	21-30	0	0	153	917	n/a	3,019	18,117
	31-40	0	0	122	2,799	n/a	2,173	49,971
	41-50	0	0	225	8,992	n/a	3,148	125,935
	51-60	10	519	954	50,563	n/a	7,677	406,871
	61-70	26	1,909	665	49,199	n/a	4,632	342,739
	71-80	15	1,353	736	65,528	n/a	4,810	428,124
	81-90	56	5,692	742	75,656	n/a	4,645	473,797
	91-100	14	1,559	618	67,385	n/a	2,622	285,782
	101-110	0	0	1,021	115,419	n/a	7,271	821,602
	111-120	0	0	249	25,402	n/a	1,491	152,060
	121-130	0	0	148	11,719	n/a	658	51,958
	131-140	0	0	84	4,721	n/a	624	34,937
	141-150	0	0	8	341	n/a	34	1,515
	151-160	0	0	3	117	n/a	27	1,013
	161-170	0	0	10	316	n/a	76	2,523
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**121**	**11,032**	**6,261**	**479,072**		**55,296**	**3,196,942**
Thsh	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	0	0	n/a	162	0
	11-20	0	0	2	0	n/a	209	0
	21-30	0	0	0	0	n/a	0	0
	31-40	0	0	0	0	n/a	0	0
	41-50	0	0	0	0	n/a	0	0
	51-60	0	0	2	96	n/a	32	1,386
	61-70	0	0	19	1,191	n/a	265	16,426
	71-80	0	0	10	810	n/a	140	11,032
	81-90	0	0	13	1,226	n/a	194	18,669
	91-100	0	0	9	1,030	n/a	83	9,229
	101-110	0	0	8	955	n/a	220	26,168
	111-120	0	0	0	0	n/a	43	5,197
	121-130	0	0	1	65	n/a	66	7,510
	131-140	0	0	5	550	n/a	68	7,226
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**70**	**5,923**		**1,483**	**102,843**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Pj1	b&s	0	0	0	0	n/a	151	0
	1-10	0	0	305	0	n/a	8,028	0
	11-20	0	0	647	0	n/a	9,793	0
	21-30	0	0	149	4,476	n/a	2,643	79,286
	31-40	0	0	48	3,489	n/a	770	55,413
	41-50	0	0	130	14,030	n/a	704	76,014
	51-60	0	0	71	9,780	n/a	478	66,030
	61-70	0	0	10	1,587	n/a	56	8,783
	71-80	0	0	131	22,365	n/a	964	164,772
	81-90	0	0	208	37,259	n/a	703	125,799
	91-100	0	0	123	22,320	n/a	424	77,132
	101-110	0	0	356	64,080	n/a	855	153,968
	111-120	0	0	43	6,907	n/a	90	14,324
	121-130	0	0	0	0	n/a	0	0
	131-140	0	0	0	0	n/a	0	0
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**2,222**	**186,292**		**25,658**	**821,521**
Pj2	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	60	0	n/a	1,138	0
	11-20	0	0	176	0	n/a	1,964	0
	21-30	0	0	87	2,001	n/a	1,002	23,038
	31-40	0	0	12	665	n/a	173	9,666
	41-50	0	0	54	4,670	n/a	271	23,568
	51-60	0	0	62	6,986	n/a	339	38,305
	61-70	0	0	27	3,671	n/a	261	34,973
	71-80	0	0	345	51,728	n/a	1,469	220,322
	81-90	0	0	250	39,726	n/a	1,430	227,394
	91-100	0	0	269	44,661	n/a	752	124,759
	101-110	0	0	287	47,866	n/a	1,025	171,167
	111-120	0	0	154	23,369	n/a	414	62,939
	121-130	0	0	0	0	n/a	9	1,000
	131-140	0	0	0	0	n/a	0	0
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**1,783**	**225,342**		**10,246**	**937,129**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Pol	b&s	0	0	0	0	n/a	1,126	0
	1-10	0	0	62	0	n/a	3,358	0
	11-20	0	0	407	0	n/a	4,023	0
	21-30	0	0	250	4,753	n/a	2,613	49,638
	31-40	0	0	91	5,031	n/a	1,502	82,631
	41-50	0	0	162	14,071	n/a	2,300	200,128
	51-60	0	0	181	20,477	n/a	1,784	201,600
	61-70	12	1,630	169	23,215	n/a	1,758	240,791
	71-80	13	2,048	495	76,274	n/a	3,720	572,826
	81-90	0	0	827	138,042	n/a	4,504	752,110
	91-100	0	0	563	96,331	n/a	2,793	477,670
	101-110	0	0	442	75,537	n/a	1,880	321,434
	111-120	0	0	181	24,782	n/a	1,415	193,803
	121-130	0	0	0	0	n/a	0	0
	131-140	0	0	0	0	n/a	0	0
	141-150	0	0	0	0	n/a	0	0
	151-160	0	0	0	0	n/a	0	0
	161-170	0	0	0	0	n/a	0	0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**25**	**3,679**	**3,830**	**478,512**		**32,775**	**3,092,631**
Prwsh	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	1	0	n/a	224	0
	11-20	0	0	0	0	n/a	0	0
	21-30	0	0	0	0	n/a	0	0
	31-40	0	0	0	0	n/a	0	0
	41-50	0	0	0	0	n/a	0	0
	51-60	0	0	0	0	n/a	0	0
	61-70	0	0	0	0	n/a	0	0
	71-80	0	0	0	0	n/a	0	0
	81-90	0	0	0	0	n/a	0	0
	91-100	0	0	0	0	n/a	0	0
	101-110	0	0	0	0	n/a	0	0
	111-120	0	0	0	0	n/a	0	0
	121-130	0	0	3	630	n/a	11	2,092
	131-140	0	0	0	0	n/a	0	0
	141-150	0	0	4	708	n/a	133	22,807
	151-160	0	0	0	24	n/a	65	10,835
	161-170	0	0	3	517	n/a	52	8,557
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**12**	**1,878**		**485**	**44,292**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Prwst	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	0	0	n/a	78	0
	11-20	0	0	3	0	n/a	95	0
	21-30	0	0	0	0	n/a	0	0
	31-40	0	0	0	0	n/a	0	0
	41-50	0	0	0	0	n/a	0	0
	51-60	0	0	2	111	n/a	9	523
	61-70	0	0	0	8	n/a	28	2,233
	71-80	0	0	0	0	n/a	0	0
	81-90	0	0	0	0	n/a	0	0
	91-100	0	0	0	0	n/a	0	0
	101-110	0	0	0	0	n/a	6	822
	111-120	0	0	0	0	n/a	0	0
	121-130	0	0	0	0	n/a	0	0
	131-140	0	0	2	263	n/a	14	1,972
	141-150	0	0	28	3,726	n/a	174	23,360
	151-160	0	0	0	0	n/a	45	5,832
	161-170	0	0	20	2,480	n/a	64	8,165
	171-180	0	0	0	7	n/a	34	4,298
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	9	1,076	n/a	4	525
	201+	0	0	8	1,044	n/a	75	9,250
Subtotal		**0**	**0**	**71**	**8,714**		**625**	**56,980**
Sb1	b&s	0	0	0	0	n/a	2,879	0
	1-10	0	0	276	0	n/a	3,703	0
	11-20	0	0	724	0	n/a	4,950	0
	21-30	0	0	43	85	n/a	422	843
	31-40	0	0	40	518	n/a	414	5,388
	41-50	0	0	63	1,959	n/a	749	23,212
	51-60	0	0	98	4,711	n/a	613	29,419
	61-70	0	0	145	10,450	n/a	1,137	81,883
	71-80	0	0	352	33,076	n/a	3,033	285,107
	81-90	0	0	687	74,233	n/a	4,703	507,975
	91-100	0	0	300	34,465	n/a	2,059	236,821
	101-110	0	0	408	47,746	n/a	2,224	260,204
	111-120	0	0	282	32,424	n/a	1,125	129,388
	121-130	0	0	266	29,000	n/a	1,398	152,406
	131-140	0	0	234	23,917	n/a	1,328	135,405
	141-150	0	0	192	18,589	n/a	666	64,632
	151-160	0	0	35	3,158	n/a	209	18,974
	161-170	0	0	81	7,007	n/a	454	39,019
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**0**	**0**	**4,226**	**321,337**		**32,066**	**1,970,677**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Sfl	b&s	0	0	0	0	n/a	284	0
	1-10	0	0	149	0	n/a	5,189	0
	11-20	0	0	305	0	n/a	5,610	0
	21-30	0	0	185	1,295	n/a	4,603	32,223
	31-40	0	0	48	1,308	n/a	678	18,302
	41-50	0	0	120	6,367	n/a	1,000	53,022
	51-60	0	0	187	14,430	n/a	1,006	77,496
	61-70	0	0	233	22,380	n/a	1,404	134,739
	71-80	0	0	292	32,736	n/a	1,773	198,523
	81-90	0	0	450	55,747	n/a	1,819	225,540
	91-100	0	0	297	38,613	n/a	1,460	189,782
	101-110	0	0	443	59,801	n/a	1,886	254,552
	111-120	14	1,764	155	19,539	n/a	668	84,152
	121-130	0	0	242	26,153	n/a	862	93,131
	131-140	0	0	342	32,481	n/a	1,205	114,464
	141-150	0	0	39	3,338	n/a	405	34,792
	151-160	0	0	50	3,980	n/a	164	13,104
	161-170	0	0	60	4,548	n/a	329	24,973
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**14**	**1,764**	**3,598**	**322,717**		**30,344**	**1,548,794**
Spl	b&s	0	0	0	0	n/a	0	0
	1-10	0	0	68	0	n/a	5,924	0
	11-20	0	0	160	0	n/a	2,635	0
	21-30	0	0	37	405	n/a	610	6,705
	31-40	0	0	45	1,607	n/a	489	17,602
	41-50	0	0	78	5,176	n/a	939	62,002
	51-60	0	0	118	10,837	n/a	592	54,487
	61-70	0	0	260	28,829	n/a	2,320	257,567
	71-80	0	0	300	37,752	n/a	1,377	173,555
	81-90	0	0	513	70,286	n/a	2,556	350,191
	91-100	0	0	354	49,949	n/a	1,351	190,485
	101-110	0	0	398	56,902	n/a	1,946	278,341
	111-120	0	0	213	28,349	n/a	610	81,118
	121-130	0	0	193	21,240	n/a	512	56,283
	131-140	5	401	83	7,350	n/a	241	21,423
	141-150	0	0	69	5,432	n/a	112	8,876
	151-160	0	0	11	815	n/a	18	1,348
	161-170	0	0	20	1,362	n/a	74	5,123
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**5**	**401**	**2,919**	**326,291**		**22,308**	**1,565,106**

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable (reserved)		Stage of Management	Available	
		(ha)	(m3)	(ha)	(m3)		(ha)	(m3)
Unkn	b&s	0	0	0	0	n/a	0	0
	1-10	552	0	6	0	n/a		0
	11-20	0	0		0	n/a		0
	21-30	0	0			n/a		0
	31-40	0	0			n/a		0
	41-50	0	0			n/a		0
	51-60	0	0			n/a		0
	61-70	0	0			n/a		0
	71-80	0	0			n/a		0
	81-90	0	0			n/a		0
	91-100	0	0			n/a		0
	101-110	0	0			n/a		0
	111-120	0	0			n/a		0
	121-130	0	0			n/a		0
	131-140	0	0			n/a		0
	141-150	0	0			n/a		0
	151-160	0	0			n/a		0
	161-170	0	0			n/a		0
	171-180	0	0	0	0	n/a	0	0
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	0	0	n/a	0	0
	201+	0	0	0	0	n/a	0	0
Subtotal		**552**	**0**	**6**	**0**		**0**	**0**
All Fus	b&s	0	0	0	0	n/a	5,859	0
	1-10	552	0	1,212	0	n/a	38,169	0
	11-20	0	0	3,449	0	n/a	42,657	0
	21-30	0	0	1,049	15,368	n/a	16,524	225,505
	31-40	0	0	527	19,622	n/a	7,295	269,677
	41-50	59	3,262	1,074	68,367	n/a	10,932	651,822
	51-60	20	1,247	2,278	161,464	n/a	18,123	1,273,338
	61-70	75	4,569	2,012	184,325	n/a	16,069	1,510,191
	71-80	277	3,401	3,245	378,567	n/a	21,914	2,521,020
	81-90	205	6,819	4,748	606,951	n/a	26,850	3,346,321
	91-100	61	3,418	3,444	471,024	n/a	17,323	2,278,200
	101-110	204	1,822	4,823	638,767	n/a	25,581	3,226,224
	111-120	67	3,532	1,659	197,729	n/a	8,410	959,849
	121-130	137	5,711	1,463	138,244	n/a	6,511	607,172
	131-140	20	401	1,260	106,410	n/a	6,293	520,689
	141-150	14	0	525	45,009	n/a	3,023	259,420
	151-160	0	0	200	14,455	n/a	1,385	105,117
	161-170	5	0	405	28,934	n/a	3,197	217,194
	171-180	0	0	0	7	n/a	34	4,298
	181-190	0	0	0	0	n/a	0	0
	191-200	0	0	9	1,076	n/a	4	525
	201+	0	0	8	1,044	n/a	75	9,250
Total All Fus		**1,696**	**34,179**	**33,391**	**3,077,362**		**276,226**	**17,985,812**

Source 2006-2011 PLF FMP. FMPM(1996), Table FMP-9
Unknown is protf islands with no fri typing, also includes 6.14 hectares with unknown stype, all area treated as reserve in SFMM

7.0 Summary of Renewal, Tending & Protection Operations

Table 6 summarizes the planned and actual renewal, tending and protection operations on the Pineland Forest during the 1992-1997, 1997-2001 and 2006-2011 FMP terms. As per MNR direction data from the 2001-2006 PMF FMP has been provided for illustrative purposes only. Table 6 format follows direction contained in the 2004 FMPM Year Ten AR-7, except that the column headings for planned/actual have been revised to the 3-five year planning terms being compared for the Pineland Forest (i.e. 1992-1997, 1997-2001 & 2006-2011).

During the 1997-2001 FMP period, none of the artificial renewal activities achieved the planned target. This is due to the early renewal of the FMP after four years of operations for the reasons outlined in section 1.0 of this report. If the planed targets are reduced by one-fifth (i.e. 20%) to account for early plan renewal then the actual achievements were within 10% of the planned levels for most activities as illustrated in the table below.

Activity	**80% of Planned 1997-2002 FMP Target Levels**	**Actual Achievement Level**	**% Achievement Level**
Seed Tree Harvest	148	198	134%
Planting	6,800	6203	91.2%
Seeding	800	151	18.8%
Scarification	0	117	11,700%
Mechanical SIP	7,600	7360	96.8%
Chemical SIP	0	29	2,900%
Aerial Tending	4,000	4510	112.7%
Ground Tending	2,800	2416	86.3%
Pre-Commercial Thinning	400	95	23.7%

For the last two completed FMP periods for the Pineland Forest (i.e. 1992-1997 & 1997-2001), the table below summarizes the planned vs. actual achievement level for each renewal, tending and protection activity. Most of the major activities were below planned levels for the two periods combined. Tree planting was approximately 11.5% less than planned due to various factors including the winterkill of 658,000 jack pine seedlings at the nursery in 1998 and a much smaller than average planting program in 1999 due to a lack of suitable sites. Aerial seeding was approximately 36.6% less than planned during these two FMP periods primarily due to a lack of suitable sites for this treatment and a corresponding over-estimate forecast in the FMP's. Mechanical site preparation was 11.1% less than planned for the two FMP periods combined. Conversely chemical site preparation was 85.1% less than planned primarily due to the lack of suitable sites available for this treatment and a corresponding over-estimate forecast in the FMP's. Aerial tending was 26.6% less than planned levels for the two FMP periods combined due to a lack of suitable sites being available for this treatment. A similar situation exists for ground tending with actual achievement levels 22.7% less than forecasted for the two FMP periods. Pre-Commercial Thinning levels were 64% less than the forecasted levels in the two FMP's combined primarily the result of candidate areas not containing enough stocking to warrant this treatment.

Considering that over the last two completed FMP terms for the PLF (i.e. 1992-1997 & 1997-2001) approximately 80.6% of the planned harvest area was actually harvested, a 77.8% achievement level for all renewal activities indicates that the proportion of renewal activity that took place closely approximated the FMP forecasted levels.

Activity	**1992-2001 FMP Target Levels**	**Actual Achievement Level**	**% Achievement Level**
Seed Tree Harvest	148	331	223.6%
Planting	14,450	12,791	88.5%
Seeding	2,104	1,333	63.4%
Scarification	-	117	11,700%
Mechanical SIP	15,854	14,097	88.9%
Chemical SIP	3,500	524	14.9%
Aerial Tending	13,000	9,537	73.4%
Ground Tending	4,900	3,790	77.3%
Pre-Commercial Thinning	1,400	504	36.0%

Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS

	Area Summary of all Forest Units (ha)							
	1992-1997 PLF		1997-2002 PLF		2001-2006 PMF		2006-2011 PLF	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Renewal								
Regeneration								
Uneven-Aged Management								
Selection Cut - Harvest								
Total Uneven-Aged Management								
Even-Aged Management								
Natural Regeneration								
Clearcut CLAAG	8,451	8,379	11,346	6,837	15,718	10,281	12,997	
Strip Cut								
Seed Tree Cut		133	185	198	2,229	1,057		
Uniform Shelterwood Seed Cut					164		210	
Subtotal Natural	8,451	8,512	11,531	7,035	18,111	11,338	13,207	
Artificial Regeneration								
Planting	7,650	6,588	8,500	6,203	11,070	12,817	5,498	
Seeding direct	1,304	1,182	1,000	151	2,679	1,097	290	
with site preparation								
Scarification				117			50	
Shelter Cones		156						
Subtotal Artificial	8,954	7,926	9,500	6,471	13,749	13,914	5,838	
Total Even-Aged Management	17,405	16,438	21,031	13,506	31,860	25,252	19,045	
Total Regeneration	17,405	16,438	21,031	13,506	31,860		19,045	
Site Preparation								
Mechanical	8,254	6,737	9,500	7,360	13,749	12,425	5,323	
Chemical	3,500	495					350	
Prescribed Burn	700					380		
Total Site Preparation	12,454	7,232	9,500	7,360	13,749	12,805	5,673	
Tending								
Cleaning								
manual						170	368	
chemical - ground	2,100	1,374	3,500	2,416	200	1,661	445	
- aerial	9,000	5,027	5,000	4,510	10,376	11,712	6,398	
mechanical								
prescribed burn								
Spacing, pre-commercial thinning, improvement cutting								
even-aged	1,000	409	500	95	838	280	51	
uneven-aged								
Cultivation								
Total Tending	12,100	6,810	9,000		11,414	13,823	7,262	
Protection (Insect Pest Control)	[redacted]		[redacted]				[redacted]	
accelerated harvest	[redacted]		[redacted]				[redacted]	
salvage	[redacted]		[redacted]				[redacted]	
manual protection	[redacted]		[redacted]				[redacted]	
ground insecticide	[redacted]		[redacted]				[redacted]	
aerial insecticide	[redacted]		[redacted]				[redacted]	
Total Protection	[redacted]		[redacted]				[redacted]	

Source: 1992-1997 PLF FMP 2002 PLF IFA Trend Analysis Table 6
1997-2002 PLF FMP 2002 PLF IFA Trend Analysis Table 6
2001-2006 PMF FMP 2002 PMF IFA Trend Analysis Table 6 & 2006-2006 PMF AR Table AR-7
2006-2011 PLF FMP FMPM(1996) Table FMP-25

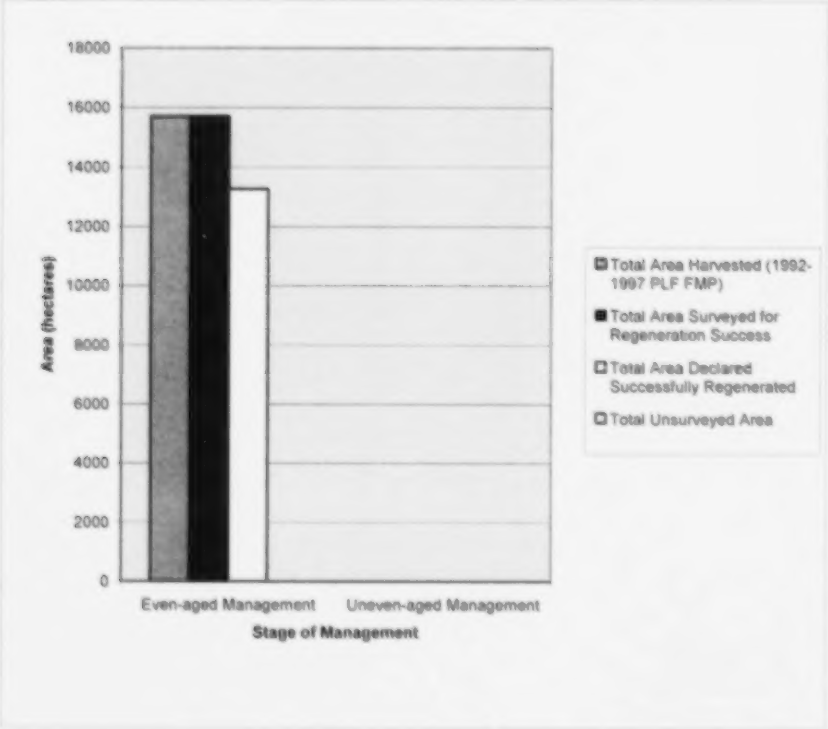
8.0 Harvest Area Successfully Regenerated

Table 7 and the corresponding graph summarizes the area harvested during the 1992-1997 FMP period and the subsequent successful renewal of this harvested area using a standard delay of 10 years.

The Company intensively surveys all of its recently depleted areas for regeneration success. All naturally regenerated areas are assessed for regeneration success from 5 to 10-years after harvest, depending on the depletion forest unit. Artificially regenerated areas are usually assessed five years after establishment through planting or seeding. The total area harvested during the 1992-1997 FMP period was 15,705 hectares. All of this area has been assessed for regeneration success with approximately 84.4% of the area surveyed being declared successfully regenerated. The area surveyed and not declared successfully regenerated (i.e. NSR) results from either insufficient stocking, or lacked height requirements to be declared Free-to-Grow. In the majority of cases these sites require more time to develop sufficient stocking or height growth to be declared FTG and successfully regenerated. This area will be re-surveyed in the future for Free-to-Grow status and be declared successfully regenerated accordingly.

Table 7 - Harvested Area Successfully Regenerated - Summary of All Forest Units

	AREA IN HECTARES (All Forest Units Combined)	*AREA IN HECTARES (All Forest Units Combined)*
	Even-aged Management	**Uneven-aged Management**
Total Area Harvested (1992-1997 PLF FMP)	15,705	-
Total Area Surveyed for Regeneration Success	15,705	-
Total Unsurveyed Area	-	-
Total Area Declared Successfully Regenerated	13,261	-
Total Area Surveyed Not Successfully Regenerated		-
NSR	2,444	-
B&S		-
Not Available for Regen (eg Roads & landings)		-
Other		-
Percent of Area Surveyed Declared Successfully Regenerated	84.4%	



Source:

Total Area Harvested: 1992-1997 PLF FMP: 2002 PLF IFA Trend Analysis Table 4

Total Area Surveyed for Regeneration Success: Domtar Silvicultural Records

Total Area Successfully Regenerated: 1992-1997 PLF FMP: FMPM(1996), 1997-2002 RPFO, Table RPFO-9

Appendix B

Audit Team Members and Qualifications

Name	*Role*	*Responsibilities*	*Credentials*
Mr. Bruce Byford R.P.F. Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management & Silviculture Auditor	Audit Management & coordination Liaison with OMNR & Auditee Review documentation related to forest management planning and review and inspect silviculture practices Determination of the sustainability component.	B.Sc.F. ISO 14001 Lead Auditor Training. FSC assessor training. 27 years of consulting experience in Ontario in forest management planning and resource inventory. Previous work experience on 8 IFA audits and FSC certification assessments.
Mr. Al Stewart Arbex Senior Associate	Wildlife/First Nations Auditor	Review & inspect AOC documentation & practices First Nations consultation Determination of the sustainability component.	B.Sc. (Agr) ISO 14001 Lead Auditor Training. FSC assessor training. 38 years experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 8 IFA audits.
Mr. David Watton Arbex Senior Associate	Forest Management Planning & Public Participation Auditor	Review documentation and practices related to forest management planning & public participation Determination of the sustainability component.	B.Sc., M.Sc. ISO 14001 Lead Auditor Training. 38 years experience in natural resource management planning, land use planning, field operations, and policy development. Previous work experience on 7 IFA audits.

Mr. Guy Winterton Arbex Senior Associate	Forest Compliance Auditor	Review FMP and related documents to ensure compliance with FMPM and other regulations Review field operations for compliance with regulations and guidelines and other documents.	B.Sc.(Agr), M.Sc. ISO 14001 Lead Auditor Training. FSC assessor training. Previous work experience on 4 IFA audits. 38 years experience in all aspects of fisheries and wildlife planning, policy development, field operations and natural resource law enforcement. Previous work on 7 IFA audits.
Mr. Trevor Isherwood R.P.F. Tri-lac Forestry Services Arbex Associate	Silvicultural, Forest Management and Contractual Compliance Auditor	Review and inspect silvicultural practices and related documentation Review and inspect documents related to contractual compliance and socio-economics Determination of the sustainability component.	B.Sc.F. Former General Manager of SFL 38 years experience in forest management and operations. Previous work experience on 4 IFA audits.
Mr. Nick Baggs R.P.F. NGB Forest Management Consulting	Technical Advisor - SFMM	Analysis of SFMM model outputs and decision criteria and the determination of the sustainability component.	B.Sc.F. R.P.F. Previous work experience on IFA audits and FSC certification assessments. Experience as OMNR Planning Forester & Unit Forest.
Mr. Laurie Gravelines	Technical Advisor – SEIM Model	Analysis of SEIM model outputs and decision criteria.	B.A. Economics 29 years of experience as a Natural Resource Economist with the Manitoba and Ontario Governments.

Dorothy Dobrik Arbex Forest Resource Consultants Ltd.	Administrative and GIS Support	Provision of administrative support and GIS support related to the selection of the field sample.	B.A. Geography, Diploma Forestry Tech Diploma GIS Specialist Extensive experience in GIS applications in resource management. Previous work on IFA audits as an administrative assistant.

Appendix C

Independent Forest Audit Guiding Principles

There are eight guiding principles in the 2007 Draft Independent Forest Audit Process and Protocol, which guide the audit.

Commitment
Commitment is reflected in vision, mission, and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.

Public Participation
The process of sustainable forest planning, implementation, and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizen's Committee, native groups and other parties with an interest in the operations of the forest Unit.

Forest Management Planning
The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve the goal. Certain minimum standards and procedures have been established upon which all management Units are evaluated.

Plan Implementation
Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievements of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.

Support System
System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

Monitoring
The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

Achievement of Management – Objectives & Forest Sustainability
Periodic assessments of the management of the forest Unit operations and the forest Unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.

Contractual Compliance
The licencee must comply with the specific licence requirements.

Appendix D

Glossary for List of Acronyms Used

List of Acronyms

ACOP	Annual Compliance Operations Plan
AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
B&S	Barren and Scattered
CAS	Compliance Activity Schedule
CFMP	Contingency Forest Management Plan
CFSA	Crown Forest Sustainability Act
CSA-SFM	Canadian Standards Association Sustainable Forest Management
DFMP	District Fisheries Management Plan
DM	District Manager
EA	Environmental Assessment
EMS	Environmental Management System
FEC	Forest Ecosystem Classification
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FMNCP	Forest Management Native Consultation Program
FN	First Nation
FNTT	First Nation Task Team
FOCIS	Forest Operations Compliance Information System
FOIP	Forest Operations Information Program
FOIR	Forest Operation Inspection Reports
FOP	Forest Operations Prescription
FRI	Forest Resource Inventory
FSC	Forest Stewardship Council
FTA	Forestry Tourism Agreements
FTG	Free-to-Grow
FU	Forest Unit
GIS	Geographic Information System
GMU	Gogama Management Unit
GRUS	Generic Road Use Strategy
HA	Hectares
HAT	Heritage Assessment Tool
HPCH	High Potential Cultural Heritage
Hwy	Highway
IEA	Individual Environmental Assessment
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
Km	Kilometres
LCC	Local Citizens Committee

m	Metres
m^3	Cubic Metres
m^3/yr	Cubic Metres per Year
MOE	Ministry of Environment
MOT	Ministry of Tourism
MOU	Memorandum of Understanding
MROL	Recognized Mill Operating Limits
NDPEG	Natural Disturbance Pattern Emulation Guide
NER	Northeastern Region
NESMA	Northeast Seed Management Association
NIC	Not in Compliance
NRVIS	Natural Resource Values Information System
NSR	Not Satisfactorily Regenerated
OH1	Tolerant Hardwoods
OLL	Ontario Living Legacy
OMNR	Ontario Ministry of Natural Resources
OSB	Oriented Strand Board
PCT	Pre Commercial Thinning
Pj	Jack Pine
PLF	Pineland Forest
PMF	Pineland-Martel Forest
Pr	Red Pine
PRWST	Red / White Pine Seed Tree
PRWSH	Red / White Pine Shelterwood
Pw	White Pine
RBT	Resource-based Tourism
RD	Regional Director
R.P.F.	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SEIM	Socio-Economic Impact Modeling
SEV	Statement of Environmental Value
SFI	Sustainable Forestry Initiative
SFL	Sustainable Forest Licence
SFMM	Sustainable Forest Management Model
SGR	Silvicultural Ground Rule
SIP	Site Preparation
SMA	Selected Management Alternative
SOP	Standard Operating Procedure
SPF	Spruce / Pine / Fir
STP	Silvicultural Treatment Packages
T&C 77	Term and Condition # 77 of the Class EA Report
T&C 34	Term and Condition #34 of the Class EA Report
TOR	Terms of Reference

Appendix E
Summary of Input to Audit Process

The following briefly summarizes the contacts and the issues reported to us by the public, auditees and stakeholders. Complete discussions of the issues, audit findings, assessments and any associated recommendations or suggestions are discussed throughout the body of the report.

General Public / Other Stakeholders

A notification explaining the requirement for the Independent Audit, the date, a map of the Forest, and an invitation to participate was placed in the Timmins Daily Press and Chapleau Express prior to the field audit. The notice included contact co-ordinates for the Lead Auditor and an invitation to complete an on-line survey on the forest management activities of Domtar and the OMNR on the Pineland Forest during the audit period. LCC members received an individual letter inviting their participation in the field audit and the offer of the opportunity for a personal interview. A total of 8 LCC members were individually interviewed.

The Chiefs of all First Nations listed in the 2006 FMP received letters and follow-up telephone calls explaining the audit process and requesting their involvement in the audit. Five First Nation contacts (3 individuals had participated on the First Nation Task Team (FNTT)) were interviewed. A summary of the IFAPP criteria specific to First Nations (2.3 – 2.3.4) was faxed/e-mailed to 5 band offices. The OMNR staff member with responsibilities for First Nation liaison (and also a participant on the FNTT) was questioned on several occasions.

A random sample of 35% of the individuals on the 2006 FMP mailing list were sent correspondence inviting them to complete a survey (mail-in or on-line) with respect to forest management on the Pineland Forest. They were invited to contact the auditor by mail, toll-free telephone or e-mail to express their concerns and views. There were 7 responses. Two tourism operators were interviewed.

Individual interviews (face to face and/or telephone) were held with managers, professionals and technical staff at Domtar (6), OMNR (8). These included past and current OMNR Chapleau District Managers and the Plan Author.

Principal issues that were identified to the audit team included:

General Public:

During the conduct of the audit we received seven responses to our questionnaire on the forest management practices of Domtar and the OMNR. Concerns raised by the public included: wood being left in the bush, timing of slash pile burning during the moose hunt, cutting near cottages, tree planting affecting forest diversity, access issues created by logging, criticism of MNR and the LCC for allowing harvesting in the Twin Lakes area, the need for more detailed recreational planning before preparation of an FMP, and use of herbicides. Our findings related to these concerns are provided in the various sections of this report.

Three respondents expressed concern about forest planning and management activities in the Twin Lakes cottage area near Foleyet. These concerns included:

- Rutting in forest operations including reserve areas.
- A lack of response by OMNR and Domtar to a Twin Lakes Cottagers petition (August 2006).
- Lack of notification with respect to harvest allocations in the vicinity of cottages.

In responding to these concerns, we found that;

- Two public information centres were held in Foleyet and that Twin Lake cottagers were on the mailing list which informed the public of the meetings. One cottager attended the information centres.
- One stand was allocated for harvest (30 ha) in the vicinity of the cottages.
- The cottagers submitted a petition requesting the harvest blocks near the cottages be removed from the plan. Cottagers attended an LCC meeting in relation to that petition.
- In response to the cottagers' concerns the stand was dropped from the FMP allocations (March 2007).
- A cottager became an active member of the LCC.

Although some public concerns remain, we are of the opinion that both OMNR and Domtar exercised due diligence in respect of FMPM requirements for public consultation and the resolution of concerns.

The Local Citizens Committee:

- Concerns about the delays arising from the IEA process and the situation where a proponent could, without prior involvement in the planning, consultation and issue resolution processes make an IEA request that significantly delayed in the implementation of forest management activities.
- Concerns that broader environmental and philosophical/political issues were being debated through local FMP's at the expense of local companies and communities.

- Concerns about OMNR capacity to carry out its responsibilities due to funding constraints.
- Concerns about OMNR staff turnover and vacancies that hindered its ability to carry out its responsibilities.
- Aerial spraying & its effect on wildlife.
- Up- to-date values information.

Native Communities:

- Concern that First Nations receive increasing benefits from forest management.
- Concern that native values be respected in the forest management planning process.
- Concerns about lack of funding and human resources needed to effectively participate in forest management planning and decision making.

Domtar Representatives (including Plan Author):

- Remote tourism (access, noise, aesthetics).
- Access development (gates, signage & temporary water crossing).
- OLL (unregulated/replacement sites).
- Sustainable wood supply.
- Implementation of NDPEG (harvest pattern and size).
- Restrictions on herbicide use (MOE IEA on going issues).
- Concerns about OMNR capacity to carry out its responsibilities due to funding constraints.
- Concerns about OMNR staff turnover and vacancies that hindered its ability to carry out its responsibilities.
- Concerns about the workload, cost and length of time associated with the FMP planning process.
- Concerns about the delays arising from the IEA process and the situation where a proponent could, without prior involvement in the planning, consultation and issue resolution processes make an IEA request that significantly delayed in the implementation of forest management activities.

- Concerns that broader environmental and philosophical/political issues were being debated through local FMP's at the expense of local companies and communities.

Ontario Ministry of Natural Resources (including the past and current District Managers):

- Concerns that the IEA process was accessible to individuals who did not fully participate in the standard consultation and issue resolution process.
- Concerns that broader environmental and philosophical/political issues were being debated through local FMP's at the expense of local companies and communities.
- Concerns about OMNR capacity to carry out its responsibilities due to funding constraints.
- Concerns about OMNR staff turnover and vacancies that hindered its ability to carry out its responsibilities.
- Access restrictions (i.e. gates, signage), enforcement & maintenance.
- Sustainable wood supply.
- Public concern with herbicide use.
- FN participation in forest management planning opportunities.

Remote Tourism Operators

- Concerns about protecting the wilderness and remote aspects of their businesses from road access and the visual and noise aspects of forest harvesting.
- Concerns about the effects of herbicide use on the Forest.
- Concern with respect to forestry operations in the vicinity of remote tourism lakes.
- One individual complained about limited accessibility to digital maps for the audit period.

APPENDIX F

Activities Associated with Meeting Class EA Term and Condition 77 and 34

The following provides a brief summary of some of the activities that occurred over the audit term with respect to meeting Term and Condition 77 and 34 of the Class EA Report.

- Domtar was an active participant in the Sault College Aboriginal Resource Technician program and employed participants from local First Nations.
- Domtar had First Nation participants in its internal "continuous education" course.
- Domtar and OMNR had hosted Native Awareness Training for staff.
- Domtar had native youths participate in its "Phenomenal Forest Day Camp", a children's camp.
- OMNR created a Resource Liaison Officer position and hired a local First Nation individual.
- OMNR has conducted several meetings with the Chapleau Ojibwe First Nation to discuss salvage harvest opportunities.
- Domtar entered into an agreement with Chapleau Cree for specific construction contracts.
- Mattagami First Nation has a contract with Domtar on the Shiningtree portion of the Temiskaming Forest.
- OMNR held several meetings with the Missanabie First Nation to discuss local forestry contract work.
- Cree-Tech, a Chapleau Cree First Nation company has been contracted for a variety of forestry jobs.
- A Chapleau Cree forestry technician attended the OMNR GIS training session.
- OMNR financially supported development of a natural resource development strategy for Brunswick House First Nation.